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TORONTO
N E N S I S



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EDITORIAL



Who will forget the year 1965-1966? This year witnessed an intensified war in Viet-Nam, a crisis over the unilateral declaration of independence by Rhodesia, another Kashmir dispute, and even a papal visit to the U.N.

On the Canadian scene, there was another Federal election, but Pearson failed to get a majority. Shortly afterwards, half the continent was plunged into darkness by a gigantic power failure. In Toronto, our twenty-seven million dollar city hall was opened, its controversial design bringing the comment from Victor Borge, "It looks like the Jolly Green Giant's urinal."

In the past few years, Torontonensis has been going through a period of change in which succeeding editors have been trying to redefine the philosophy of a yearbook in a university of this size. We have endeavoured to create a book that would contain the memorable events on campus, that would present the best literary talent on campus, and finally that would inform and entertain. We hope we have accomplished our objectives and that you will be as pleased with the book as we are.

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RESEARCH IN BIOLOGY

by Judy Hamilton

Teaching and research in biology at the University of Toronto are done by the Departments of Botany and Zoology. An Honour Course in the Life Sciences, classes for students in General Science and General Arts, and an introduction to living organisms for all professional faculties concerned with living things are given.

A major aim is to give students a sense for "life", to develop their appreciation of the interrelations and dependencies among plants and animals. They are taught the fundamentals of classification and structural studies, their relevance to an understanding of evolution and of the development of improved forms through breeding. Biochemical approaches in physiology and molecular genetics answer and raise new questions about processes at a subcellular level, about molecules that live. In ecology classes, discussions on the influences of environment on plants and animals lead to educated concerns about the problems of conservation, pollution and radioactive fallout.

The opening of the Ramsey Wright Zoological Laboratories has given the Department of Zoology new encouragement. Small, quieter labs on closed circuit T.V., a lounge, and a single, spacious library are innovations appreciated by students and professors. More research space, cold rooms, sterile rooms, dark rooms, and sound-proof rooms widen the scope

of possible research problems in all fields. For example, animal and bird behaviour experiments involving complicated sets of conditions such as cold-turning-warm in darkness, or constant warm temperature and regular light cycles, or no external noise except that piped in can now be tried. Successes in tissue culturing and embryological transplantations are multiplied when the work is done in the positive-pressured, u-v irradiated sterile rooms. Animal and environmental control rooms, plant growth rooms and greenhouses, a radiation study section, and improved shop and photography facilities were carefully worked into the building plans. Electronmicroscopes, high-speed centrifuges, autoclaves, and fine balances are available to professors and graduate students.

Fundamental research in the departments is broad and deep. Mycology — studies of soil fungi and plant fungi — and the closely linked plant pathology have been major fields of interest in the Department of Botany. Contributions such as the development of tomato plants immune to leaf mold are important in agriculture. Morphology of cambial cells, the actively-growing part of trees, is being studied. Chromosomes of black flies and of members of the buttercup family have long been looked at to indicate lines of evolution and perhaps, one day, the structure of the chromosome. Classification and distribution of

plants have led the plant systematists into "mechanized phytogeography" of Ontario flora. Studies of metabolism and regulation in developing plant tissues are done, and starch grains are studied through electronmicroscope work and biochemical approaches. Factors influencing the succession of plants in bogs, marshes, and forests are studied, and work in the culture, taxonomy, and physiology of blue-green algae is done.

In the Department of Zoology, limnology — the ecology and physiology of fresh-water organisms — and marine biology are fields of extensive research. Aspects of forest and aquatic insects are studied. Tomato, Protozoan, human, population, and bacterial and viral genetics are investigated. Aardvark skulls and turtles' noses are concerns of the vertebrate anatomists. The biochemistry of differentiating cells and regenerating new limbs interest the developmental biologists. The ecologists work in the field and in the lab, analysing bird movements and calls, and following field-mouse territorial activity. Physiology, observational and experimental, of hibernating mammals, of insects, of nervous systems and excretory systems, of single cells and unicellular animals is done by biologists in the department.

The departments seek to foster individuality of interest and approach. The fields worked in are as diverse and fascinating as life itself.

ASTRONOMY

by Dr. D. MacRae

Stars are born out of the interstellar gas and dust, held together by gravitation, and made to shine by the nuclear energy generated in the deep inside, where hydrogen is converted to helium. With time, their structure (internal pressure, temperature and density) and their chemical composition change, leading to differences in colour and luminosity. The changes are also revealed in the appearance of their spectra. At some stages instabilities occur which lead to characteristic fluctuations of the light.

Massive stars age quickly while less massive ones like the Sun age more slowly and for the most part in a less spectacular fashion. The stars in a cluster must have had a common origin in space and time and must be moving with identical speeds along parallel paths. Some clusters are billions of years old while others, relatively speaking, have been born only recently.

Galaxies are assemblages of stars in all stages of evolution. They demonstrate the interplay between the stars and the interstellar medium, the balance of gravitation and rotation, and the far-reaching influence of the mysterious magnetic fields.

At the David Dunlap Observatory in Richmond Hill, in the Departmental offices on campus, and elsewhere, we are searching for a greater understanding of the processes going on in stars and the forces which guide their development.

The oldest known stars in our galaxy, the ones found in globular clusters,

are believed to be deficient in metallic atoms. How this deficiency has influenced their evolution has recently been studied by the theoretical astrophysics group under Professor Demarque. The lengthy calculations were only possible because of the facilities of the University's Institute of Computer Sciences. They have led to a better value of the age of these clusters, about 12 billion years.

Professor Hogg has made a lifetime study of globular clusters and has an international reputation in this field, particularly with regard to the variable stars they contain. Her file of photographs is unequalled and the study of these extensive observations is continuing. She and a collaborator recently discovered a nova in one of the cluster.

In other investigations by the theoretical astrophysicists, the evolutionary tracks of stars with masses up to 40 times the mass of the Sun have been studied. In such massive stars, rotational instabilities occur and gas is thrown off in shells.

Instabilities of another sort lead to the pulsations and the fluctuations in light already referred to. These have been studied by Professor Fernie. One result of this work is that distance of such stars can be found in spite of the obscuring effects of dust particles along the line of sight to the star. Dr. Fernie has an extensive programme of photometric observations — brightness, colour, and of the strengths of absorption lines — under way at Richmond Hill. The 19-inch

reflector has long been used for this purpose and in late 1965 a new 24-inch telescope was installed. Both are provided with the most up-to-date electronic equipment.

The 74-inch telescope (Canada's largest) is also used part of the time for photoelectric photometry. It is particularly useful for measures of faint objects or of the high dispersion spectra of stars. Professor van den Bergh and his graduate students are carrying on work of this kind, which represents a relatively new departure in the use of this instrument.

The 74-inch's primary application, however, has been and continues to be in spectroscopy — the study of emission and absorption lines in a star's spectrum. Dr. Heard's collection of spectrograms of emission-line stars of high temperature is probably the best in the world. The Dunlap Observatory has long been famous for its measures of the radial velocities of stars by means of the Doppler Shift of the spectral lines. A certain percentage of stars show variations in their radial velocity, a clue that they are really double stars. In favourable cases the masses and radii of such stars are revealed. Many such binary stars have been discovered with our telescope.

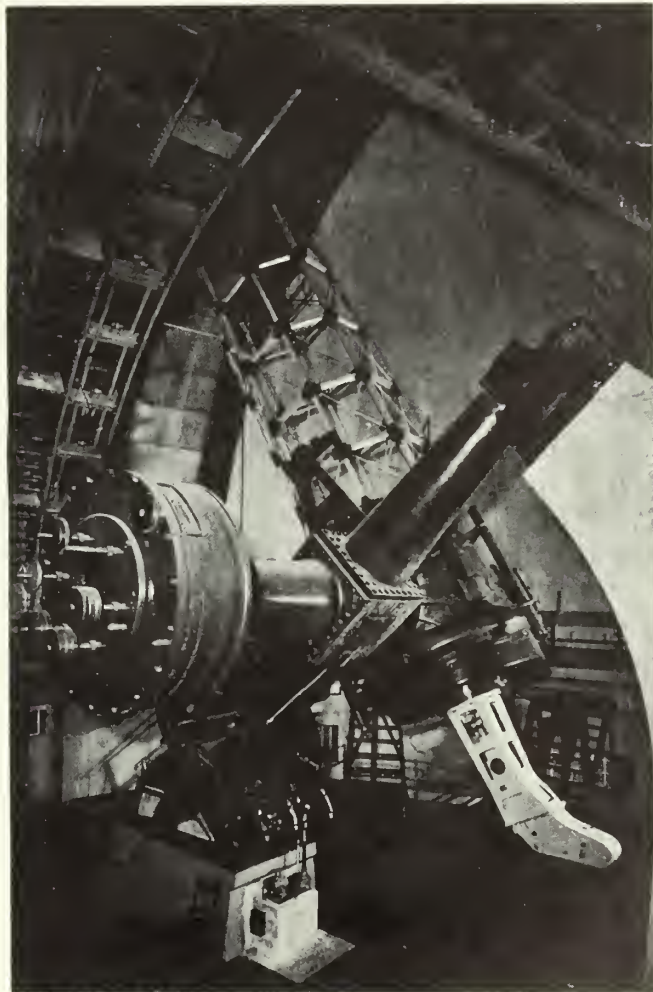
Going from double to multiple stars, a recent observational program under Prof. Heard's direction has yielded the speeds of 72 stars in the vicinity of a well-known cluster, helping to establish their membership or non-membership in that group. Stars in the general field also have come in

for their share of attention, giving more knowledge of the structure and dynamics of the Milky Way galaxy. All these spectral studies of stars have been boosted by the recent installation of a new all-reflection grating spectrograph of advanced design on the 74-inch.

Another quite different attack on the problem of the structure of the galaxy is possible by observations at radio wavelengths. Free electrons gyrate in the interstellar magnetic field and radiate over a wide frequency range. At wavelengths of a few tens of centimeters this radiation shows detectable polarization, its direction being related to the direction of the magnetic lines of force. The question of how closely the magnetic fields are related to the spiral arms of the Milky Way is still an open one. A broad region of the northern sky has now been studied by Prof. MacRae's radio astronomy group, working in collaboration with the Department of Electrical Engineering. For this program, the 33-foot paraboloid at the Algonquin Radio Observatory has been used. At Richmond Hill, some solar observations and certain night-time work in radio astronomy are carried on.

Finally the cosmos in time and space is studied by Prof. Roeder and his graduate students — are the so-called constants of nature really constant? What effect would a slow variation of the constant of gravitation have on the evolution of the stars? And closely related to observational cosmology is the question of the changing appearance of the elliptical galaxies as their component stars evolve.

Change, not changelessness, is the keynote of modern astronomy. From the Moon to the Metagalaxy celestial objects in great variety enable us to overcome limitations of remoteness and the brief time we have to watch.



74-inch telescope at the David Dunlap Observatory.

STUDIES ON THE IDENTIFICATION OF THE CAUSATIVE AGENT OF INFECTIOUS HEPATITIS

by A. M. Jezequel, M.D.* and J. W. Steiner, M.D.** Department of Pathology, University of Toronto

The search for the cause and cure of cancer is receiving much publicity, and many consider it the most important problem facing the medical researcher. However, there are other, less dramatic and less well publicized diseases, which constitute an equally important threat to public health. Infectious and serum hepatitis are examples of the latter. They have a high morbidity rate, which may attain epidemic proportions; they are disabling and may entail grave sequelae, prolonged ill-health, and rare, fulminant cases may progress rapidly to death.

The infectious nature and transmissibility of hepatitis from man to man has been known since 1942. However, experiments on infectivity and transmissibility carried out in embryonated hen's eggs and in tissue culture cells gave inconstant and contradictory results. More recent evidence suggested that monkeys are carriers of the causative agent, since some handlers of monkeys, bitten by their charges, developed the disease. The examination of monkey liver cells from animals infected with human serum or excreta derived from hepatitis patients led to claims that the changes were similar to the alterations found in human liver cells. However, such allegations were rather meaningless, since the causative agent could not be seen in either human or monkey livers.

The recent introduction of new techniques of tissue culture and the advent of the electron microscope have raised new hopes. Although there are numer-

ous recent reports on the cytopathic effects induced by infectious materials derived from human hepatitis cases in tissue culture, no definite relationship has yet been established between the transmissible agents thus far isolated and the disease. The study by electron microscopy of needle biopsies of human livers has also been the subject of numerous reports, but up to now the results have been disappointing. Despite some claims to the contrary, based on erroneous interpretations, no virus could be seen in the livers of either acute or chronic cases of human hepatitis.

The problem of viral hepatitis is challenging and forms part of the research program carried out by Drs. A.-M. Jezequel, J.W. Steiner and J.C. Sinclair in the Departments of Pathology and Bacteriology of the Faculty of Medicine, University of Toronto. Initially, during the years 1959 to 1962, Dr. Sinclair's team of virologists isolated five transmissible agents from cases of infectious hepatitis during outbreaks of the disease in Ontario. One of them was classified as an enterovirus (Group ECHO), but four remained unclassified. Electron microscopical studies have shown more recently that these unidentified viruses belong to the group of picornaviruses. More recently still, three of them have been found to be related immunologically to Cocksackie viruses. The role of these viruses in the causation of viral hepatitis is still in question. This is so because only a few investigators have succeeded in neutralizing the cytopathic

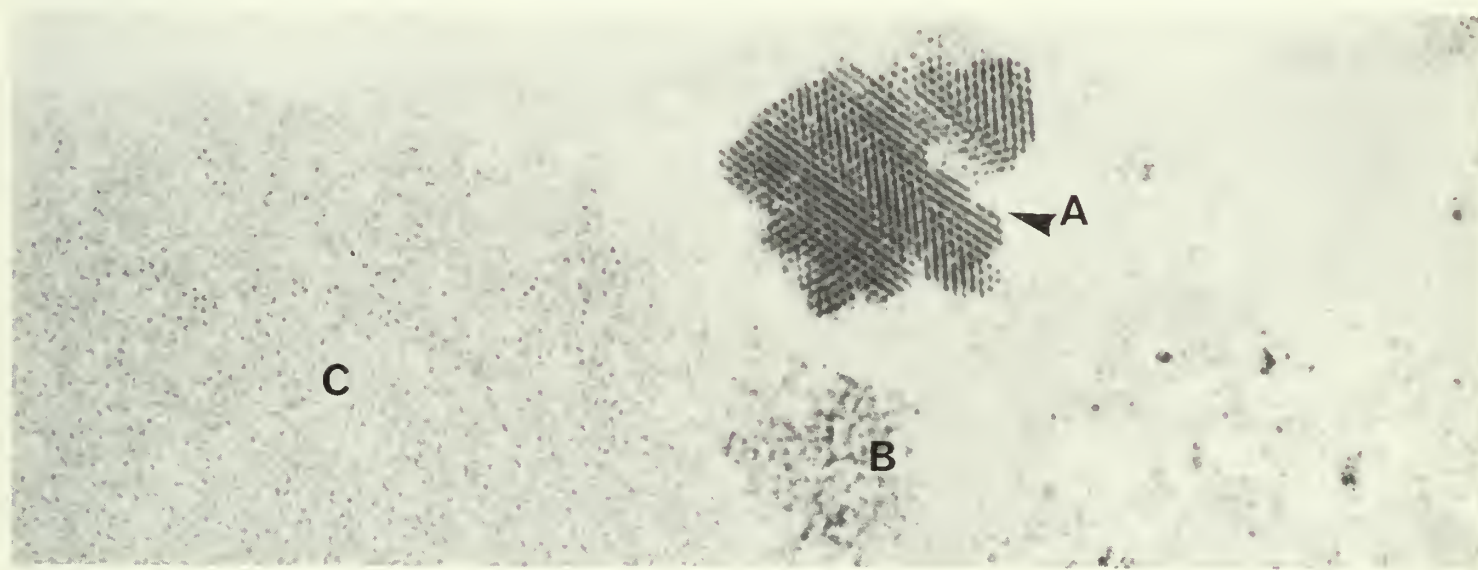
effects of Cocksackie viruses with the convalescent sera of hepatitis patients who have been found to harbour them. It is, therefore, possible that the Cocksackie viruses are merely incidental "passengers". However, reports of the isolation of Cocksackie viruses during outbreaks of hepatitis are becoming more numerous, and very recently a group of virologists in Halifax, Nova Scotia have re-emphasized the possible connection between the Cocksackie group of viruses and hepatitis. We have suggested, as a working hypothesis, that the failure to demonstrate the viruses in the liver may be due to the fact that the viruses have an essential affinity for the intestine, and that they produce the well known liver injury secondarily to their sojourn in the wall of the bowel. Indeed, this is a return to the concept of hepatitis of more than a 100 years ago, when it used to be thought that "icterus catharralis" was a primary intestinal rather than a primary liver disease. Ideally, therefore, in order to study this disease, one would need to obtain specimens from the bowel and liver commencing at the time of first contact between the virus and the subject to the time of convalescence, and to examine such tissues by all available modern techniques of immunology, virology and pathology.

Unfortunately, the disease occurs only in man and therefore, only tissues of human subjects are likely to produce the desired results. It is for this reason that we have undertaken a study in collaboration with a group of investi-

gators supported by the U.S. Army, on tissues obtained from soldiers in areas of the world in which hepatitis is prevalent as well as on samples obtained from human volunteers. We are examining by virological and electron microscopical techniques large

numbers of such samples and we are hoping that by such a well organized collaborative effort, we will be able to throw some light on the obscure problem of this important disease, which remains the only one of the common human virus-induced dis-

eases not yet clearly understood. Our ultimate hope is that the clear identification of the causative agent will enable us to produce a vaccine which will eliminate one more of the scourges of mankind.



The illustration shows a small portion of a tissue culture cell infected with the Coxsackie viral agent isolated from a hepatitis sufferer in an Ontario epidemic. The mature virus (A) forms

a crystalline array in the periphery of the cell. Areas B and C may be stages in the maturation cycle of the virus. The individual virus particles in the crystal measure 24 millimicrons

in diameter (24 millionths of a millimeter). This figure shows the virus particles 56,000 times magnified and impregnated with lead hydroxide to endow them with contrast.

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RESEARCH IN PSYCHOLOGY

by Professor Amsel

The scope of the research enterprise in psychology is very great. A non-exhaustive survey of work in progress in just the University of Toronto psychological laboratories shows that studies are being conducted relevant to a wide range of research topics in areas such as short-term and long-term memory of visual and auditory materials; the organization of verbal material in free recall; EEG desynchronization as related to arousal and orienting reactions; situational influences in personality testing; the relation of anxiety to interruption of behaviour; "timing" behaviour; the effect of CNS depressant drugs on imprinting (very early learning); the effect of cortisone on avoidance learning; information processing and recognition time; imitation and self-evaluative behaviour; and many other areas. The subjects in these experiments are humans of all ages and in all conditions, cats, rats, hamsters, pigeons, turtles, fish and fowl. The work of my laboratory, which I will describe, should be viewed in this perspective.

Our experimental work is related to learning and motivation theory. However, the kind of psychology of learning and motivation we deal with in the laboratory is less a matter of the acquisition of knowledge or of particular skills and more a matter of behaviour modification without intent or awareness. It is the kind of learning that does not necessarily require verbal involvement but can occur in non-articulate organisms or in humans operating at pre-articulate or sub-articulate levels. Fears, conflicts and frustrations are presumably learned

at these levels, which may involve nothing more than simple conditioning and selective (trial-and-error) learning.

Most of the research in our laboratory has been organized around a particular kind of thinking about goal factors, having mostly to do with the role of nonreward in circumstances of inconsistent or intermittent reward. The theory which guides our research, at the moment, is in the form of a classical (Pavlovian) conditioning model of goal-directed behaviour. (It is a familiar tactic in science that we build a conceptual model out of well-established relationships and use it to guide our thinking in areas we know less about.) We are testing various aspects of a model of frustrative nonreward with particular reference to the consistency of reward and the persistence of behaviour.

Put simply, our hypothesis has been that persistence is an attribute of behaviour that we learn when frustration occurs in situations marked by inconsistency of reward experience; that persistence (resistance to extinction of responses) involves learning to approach despite anticipated frustration. (A companion view is that the learning of "courage" — learning to approach to the cues of fear — depends upon inconsistent reward and punishment for the same response, that is to say, interspersing reward for a response with gradually-increasing punishment for the same response.)

For the past four or five years part of our program of research has been concerned with a test of these notions

of frustration and persistence in experiments involving partial or intermittent reward. We have studied these effects between-subjects and within-subjects. The between-subjects experiment is one in which, by controlling the arrangement of frustrative and reward experiences, one group of animals is subjected to a treatment designed to produce persistence while another group is exposed to a non-persistence treatment. We are conducting experiments varying systematically such factors as the percentage of reward, the pattern of reward and nonreward trials, the interval separating one trial from the next, and so on. We have attempted to mitigate persistence effects through the use of drugs, and have studied how persistence transfers from one motivational-reward situation to another. All of these kinds of experiment involve comparing one subject (or group of subjects) to another.

The within-subjects experiment is designed to control persistence or non-persistence within the single organism, training the subject to be persistent to one cue in a situation and non-persistent to another in what is otherwise the same situation. An example which may elucidate the difference between such within-subject and between-subject research is from the complex of family relationships. (We do not work in this area at all, but it is a good, non-technical example from common experience.) Assuming that the family is composed of mother, father and two children (identical twins would be best for experimental purposes) each child can be regarded as a 'subject' in a within- and a between-subject

'experiment.' The within-subject questions in this experiment are: Can the same child learn a different persistence pattern to each of the two parents who serve as stimuli and rewarding (or nonrewarding) agents for the behaviour? If so, to what extent will persistence learned to the inconsistent rewarding tactics of one parent transfer and become a response to the more consistent parent? The between-subject questions in the family apply to the relationships that hold between one parent and both children: To what extent will difference in the children be attributable to different treatments by the same parent? To what extent can differences in reward-nonreward experience produce two different personalities, one relatively more persistent than the other?

We are pursuing research related

(ultimately) to more abstract forms of the preceding questions in the more abstract setting of the laboratory using rats as subjects. At the same time we are examining the influence of a number of factors and agents on the intermittent reward (persistence) effect and on the frustrative reaction to non-reward. On the stimulus side these include the effects of drugs, early experience with shock, neonatal anoxia conditioned emotionality, patterning of reward and nonreward trials in learning. On the response side we are studying the interrelationships of a variety of behavioural and other indicators of frustration and persistence, such as trials to extinction (cessation of responding), rate of discrimination learning, heart rate changes, variations in 'spontaneous' activity, and others.

RESEARCH IN GEOLOGY

Research in the department of Geology is proceeding along several broad fronts:

The origin of rocks and minerals. Studies at elevated temperatures and pressures with equipment capable of duplicating conditions that exist at depths down to the base of the earth's crust and the upper part of the mantle to determine how certain types of rocks originate.

Alkaline rocks and carbonatite complexes are of current, particular interest. They contain most of the world's supply of niobium and rare-earth elements — often present in little-known minerals. A broad program of radioactive age determinations is gradually establishing the dates in geological time at which rocks were formed in Canada.

Research on the properties of water and aqueous solutions at elevated temperatures and pressures, and their reactions with minerals, rocks and melts or magmas is continuing. The role of "hydrothermal solutions" and "volatile constituents" has long been regarded as important in geological events in the earth's crust, but equipment to allow the detailed investigation of these phenomena in the laboratory has only recently been developed. This equipment, which has been acquired by the department, includes vessels which will contain water and other materials at pressures up to 150,000 p.s.i. and temperatures to 1000° C. Geological events of current interest include the transport and deposition of ore minerals, vein formation, wall rock alteration, metasomatism, and

the formation of magmas, pegmatites and migmatites.

The computer is being used to delineate fruitful areas for experimental study of the stability ranges of solid phases in complex mineral systems. Programs are being developed for displaying phase boundary relations in multicomponent chemical systems. One class of these programs computes temperatures of melting in salt systems with any number of components and then plots a projection of sets of isotherms from hyperspace to a selected two-dimensional plane.

Basalt is probably the most abundant type of lava on the earth's surface and generally conceded to have been derived by partial melting of the earth's mantle. Studies of the variations in chemical and mineralogical composition of these lava flows gives valuable information on the possible compositional variations in the earth's mantle (ie. at depths greater than 22 miles). Participation in the 1965 Oxford University East Greenland Expedition by members of this staff gave an excellent opportunity to examine and collect basaltic lavas never before studied by geologists.

The Structure and deformation of rocks

Studies are underway which are aimed at unravelling the deformational history of rocks from features mapped in the field and observed during laboratory investigations. The projects include:

1) a determination of the mechanical significance of elongated crystals aligned in a folded metamorphosed rock — in this case, hornblende in a

folded gneiss. The project consists of a strain distribution analysis of the rock, a determination of the orientation and the degree of alignment of the crystals, a correlation between the orientation maxima for the crystal axes and the principal directions of strain, followed by re-construction of the dominant mechanism of grain orientation.

2) a study of the transition, in alabaster, from a brittle to a ductile material as it is deformed under conditions of increased confining pressure. The object is to define mechanisms by which this transition in behaviour takes place. If the same mechanisms can be recognized in geologic structures, it is possible to interpret something more of the process of development of the structures.

3) Lake Superior is an area of particular interest to geologists concerned with the structure of the earth's crust. Structural features of continental dimensions converge here. In cooperation with the Division of Geophysics, field measurements and laboratory analysis will provide an estimate of the configuration and magnitude of Precambrian lava bodies that occur in the Lake Superior basin. This information is essential to further analysis of regional structure in North America.

Study of sulphide minerals and solid phase equilibria in sulphide systems. The founding of a new species is always of great interest to mineralogists. This year a new complex sulphide of lead, copper and bismuth is being studied in cooperation with scientists from the University of British Columbia who

discovered the species. It presently bears the transitory name: Alice Arm No. 2 after the locality in British Columbia where it was found. The problem of defining this mineral is especially intriguing because it occurs only in microscopic amounts and therefore will tax the skill of the mineralogist to chemically analyze it and determine its structure and properties.

Meanwhile studies of solid phase equilibria in several sulphide systems, including the one that embraces the new mineral, are underway using the method of equilibration by recrystallization of two or more sulphide phases in alkali halide melts.

Application of research methods and instruments to geological studies. Most

attention in this area is being directed at present towards developing tools for performing quantitative analyses of geologic materials, particularly for improving the speed and accuracy of analyzing silicate minerals which constitute most of the earth's crust. Interest also centers on developing satisfactory methods for determining the rare earth elements in certain minerals of complex composition. This is a largely disregarded field. Three types of methods are under study

1) analytical chemistry, both classical and instrumental

2) x-ray spectroscopy, a non-destructive method of analyzing for the major constituents in macroscopic samples.

3) electron microprobe analyzer, a similar method which uses an analyzing beam 1 μ in diameter and therefore applicable to microscopic grains.

Use of the computer as an integral part of teaching introductory geology. Programs have been developed which set and mark objective type examination papers and analyze student responses. The method enables the instructor to make frequent short tests of class progress in reading assignments. The advantage for very large classes is obvious. If a direct line to the computer is available, the examination can be written, marked, analyzed and discussed by the instructor in the same period.



Geological Expedition drags stores and specimens by sledge over East Greenland.

RESEARCH IN FORESTRY

by Professor Jorgensen

In an old dairy building, now a part of the West Campus of the University of Toronto, a young graduate student is occupied putting wooden cubes in lamp chimneys placed over ice-box jars containing a piece of moist glass filter paper and four sprouting kidney beans.

To the casual observer, this activity may appear very remote from the field of forest research. However, a closer examination reveals, that the student is in fact doing research of a basic nature and of far reaching importance to forestry.

The discovery that wood gives off biologically active gases, which can retard and even kill higher plants, and which at the same time promotes the growth of micro-organisms is a recent result of research in the Faculty of Forestry. Its practical implication is far from known, but the use of sawdust and woodchips for covering of seedbeds in the forest nursery has demonstrated weed control and does sometimes cause poor seedling development. These observations hitherto unexplained, now may be explained as resulting from the presence of volatiles produced in the wood. The exact nature of the gases is not yet known, but unsaturated aldehydes have been demonstrated as causing a similar growth retardation on higher plants, such as that caused by wood samples. The research on volatile compounds produced by the autoxidation of fatty acids in dead wood may prove to be of importance to many aspects of forestry.

Processing of cut timber is another field where research has been and is

making new and revolutionary developments possible. This has very recently been reflected in the development within the Faculty of an undergraduate course in Wood Science and Forest Products complementary to the Forestry course and the basis for faculty research and graduate training in this field. Modern methods in wood processing, both of a mechanical and a chemical nature, have continually gained new markets for forest products and cut losses due to waste in processing. This development is not only desirable but also an economic necessity. As a whole, economic considerations today play an increasingly important role at the decision-making levels in forestry. In no other human venture is the philosophy of the decision-maker so important as in forestry, where harvesting of the final product can be expected only after 50 to 120 years, depending on the tree species. The long-term economic forecast, based on projected raw material and labour demands, determine today the choice of tree species to be grown as well as the managerial methods to be applied.

These aspects of research of increasing importance are closely tied in with the research developments in the central research objective within the Faculty of Forestry, namely Silviculture, the applied science dealing with the cultivation of the forest.

Man has always influenced the development of the forest through his activities. For centuries his influence was often of a negative nature through destruction by fires purposely set for hunting of game or clearing of land

for agricultural purposes, or through indiscriminate logging. However, in this century the Canadian forester, through the development of fire-control organizations and techniques, has set the stage for the final transfer of nature-given unmanaged forest into highly productive managed forest. This transfer requires deep understanding of the interactions between many, often correlated, environmental and biological factors that determine tree growth and development. Silvicultural techniques ranging from planting methods and cutting systems to aerial application of pesticides and herbicides, can only be developed and evaluated on the basis of research findings in the fields of Forest Soils, Forest Meteorology and Hydrology, Dendrology, Tree Physiology, Wildlife Biology, Forest Entomology, Forest Pathology and Forest Tree Breeding. For this reason, silvicultural research usually requires the co-operative effort of representatives from these complementary subjects, applied sciences, focused on the job of providing information necessary to the silviculturalist in his stride toward the development of biologically improved forest-management methods.

Since 1962, with the establishment of the Shade Tree Research Laboratory, Faculty research has been expanded into research on single tree problems. The very severe impact of the Dutch elm disease in Southern Ontario, denuding the farming landscape as well as cities, made it desirable to initiate research on the following problems now facing us:

- 1) Community control of the spread

of Dutch elm disease and cure of diseased trees.

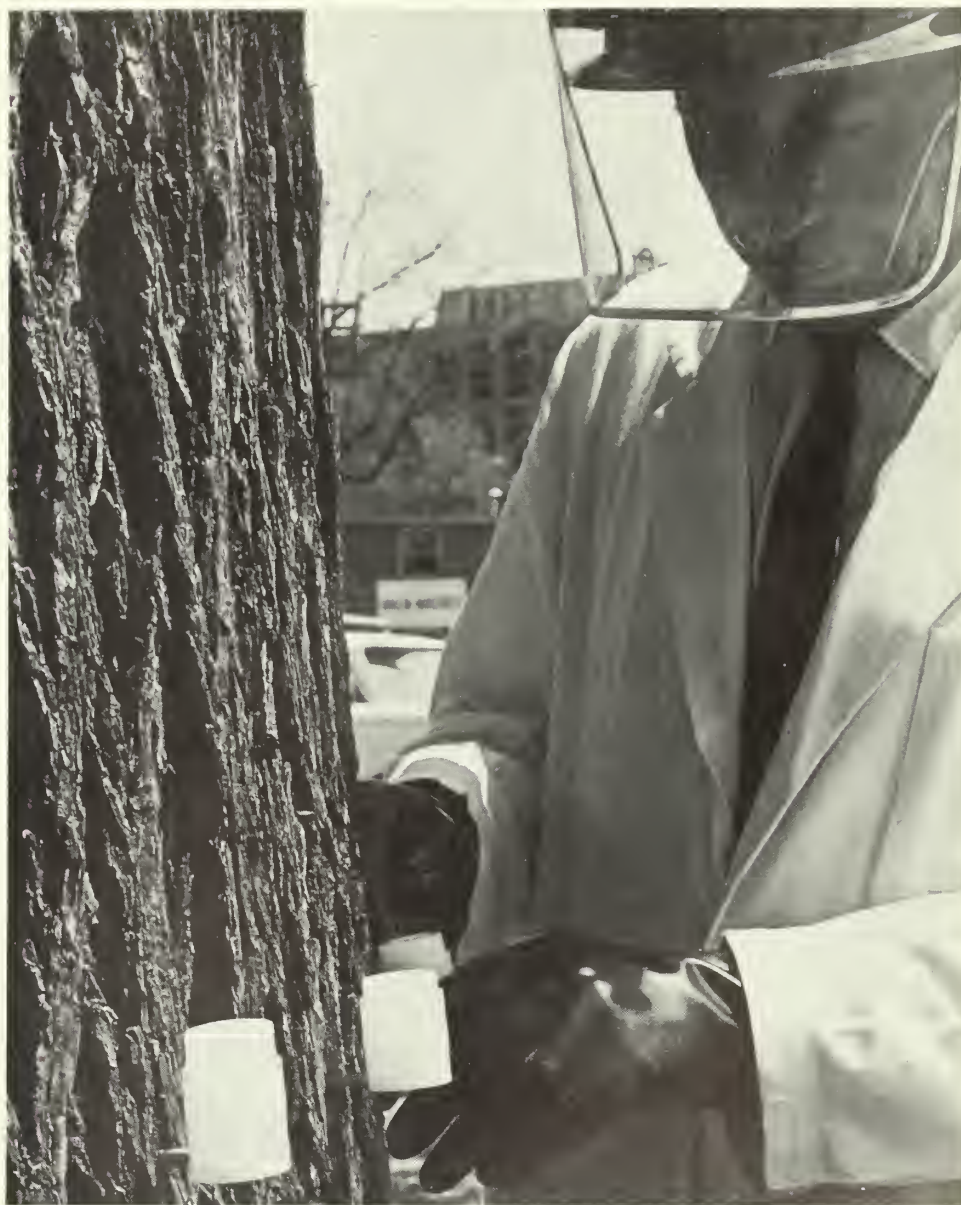
2) Replanting of cities and farms.

Research activity in this field has, so far, mainly been concentrated on the first problem and progress is being made on the entomological, as well as the botanical aspects. Insecticides for spraying and for injection into trees are being tested and the possibilities of biological control of the bark beetle vectors, through rearing and sexual sterilization of beetles for release, are being explored. Laboratory methods for physiological studies in relation to the cure of diseased trees have been developed and biochemical studies of the natural defence mechanisms in elm are in progress.

Research in the Faculty of Forestry covers a very wide field indeed and could not be properly conducted without the support and understanding that Faculty members and students enjoy in other Divisions of the University of Toronto.

Injection of systemic insecticide into elm tree in order to prevent bark beetle feeding.

(Photo 1965 — Courtesy Ontario Hydro)



RESEARCH IN ENGINEERING

by Frank Vallo

The progress of civilization has depended upon man's ability to produce metals and materials. Modern technology makes increasingly severe demands upon both metallic and non-metallic solids; in fact, almost every engineering project is limited by the materials which are available. Aerospace travel, the utilization of nuclear energy, the transistor, the computer, the heat engine and most modern devices are possible because of the development of suitable materials.

This is an entrancing and fruitful field for research which uses the great resources now available, such as the electron microscope, and the electron microprobe. A related field is the production of metals and ceramics and the like, involving the use of high temperatures, vacuum special atmospheres. New metals such as zirconium, titanium, beryllium, have been successfully produced only in recent years as a result of research.

The Department of Electrical Engineering has one of the larger post-graduate programmes in this faculty, with some 100 students. One quarter of these students will work to the doctorate level. These numbers are steadily increasing. If expectations are accurate, 1971 will see the number of post-graduate students triple.

The scope of electrical engineering research is constantly widening. Technical sophistication in other disciplines has brought electrical engineering researchers into close collaboration with many fields. For example through

the recently established Institute of Bio-medical Electronics, electrical engineers are working with medical doctors in the development of a blood flow meter which utilizes the principle of the Hall Effect in its measurements. In the same field this institute is developing a gamma-ray camera which makes motion pictures of the diffusion of radioactive materials through human organs. The development of Radio-Astronomy techniques brings electrical engineering and the Department of Astronomy researchers together. The design and building of radio telescopes requires the collaboration of astronomers and electrical engineers. These projects take students and their instructors to the Dunlap Observatory near Richmond Hill and to a radio-telescope installation in Algonquin Park.

The Electrical and Materials Science Departments are in the process of setting up joint ventures into materials research such as their films and fluid metal motion. The aim of this work is to develop new forms of electrical circuits and fluid pumps.

As well as these inter-disciplinary ventures there is much work in the traditional fields of computers and power systems. A hybrid digital and analogue computer developed by this department is one of the first in the country. Inter connected by an analogue-to-digital convertor, this machine facilitates the development of digital control programmes for industrial processes which are simulated

on the analogue machine. Although power systems isn't a popular field of research for North American Universities in general, the programme here, in this field is well advanced. Non-linear magnetics including static frequency multipliers and dividers and static voltage control elements are the subject of typical research studies. Work with synchronous machines and their equivalent circuits, protection and control of power systems, E.H.V. transmission, corona losses, radio interference also receive close attention on the post graduate level.

The above examples will serve to indicate the vitality and diversity of opportunities for graduate study and research in electrical engineering.

The Industrial Engineering department has an extensive post graduate program as well.

For example, work is being carried on in the field of System Studies. This area concerns itself with the technical side of operations such as mining and hospitals where there are problems of scheduling and cueing.

Optimal Control Theory is another concern in the post graduate courses. It involves numerical techniques and concerns itself with such problems as how to get a missile to a certain point with a minimum of fuel.

One of the more interesting facets of the Industrial Engineering Department is the Human Factor's Engineering research. How does a human perform in a complex situation under fatigue?

There is a connection here with research being done in the Institute of Bio-medical electronics.

As well, the department concerns itself with the Computers and their application. Some of the University exam schedules have been arranged with a computer. Also there is considerable work being done with computer recognition of characters. Someday the computer may be able to read written information and recognize certain characters.

This is just a thin slice of the research being carried on in Industrial Engineering. Many people are attracted from other courses to do post-graduate work in this department. It's not surprising because Industrial Engineering is the fastest growing in Canada.

U.OF T. HITS NUCLEAR BIG TIME

by P. Stangeby

Near the lower end of campus, reposing behind a pair of fifty ton doors and buried under twenty-two feet of earth and concrete, sits the current darling of the U. of T. Nuclear Physics group, the new thirty-five million electron volt linear accelerator (Linac).

The Linac, located in its own custom built lab between the Nurses' Building and the Lash Miller Building on St. George St., is designed to propel electrons at speeds approaching that of light (650 million miles per hour), and define their trajectory so as to smash into selected targets. Generally, the intention is to study the effects when such streams of electrons impinge upon the nuclei of the target material.

Not only will the Nuclear Physicists have access to this outstanding research tool (one of a dozen in the world) but the Chemists and Biophysicists as well, will reap the benefits which can only be provided by such a high powered source of electrons.

Basically, the principal on which the Linac operates, is to keep a constant attractive force on the electron as it travels down the barrel of the accelerator. Much like a surf board rides a wave, the electron keeps "rolling down a hill" which ever moves to keep up with it. The farther the electron goes, the greater its velocity becomes (in fact at Stanford a big brother

of the Linac is under construction — a two mile long behemoth — which will accelerate particles to energies of billions of electron volts).

For the composure of those concerned about the dangers of this bolt of lightning running amuck (in bursts it will attain the power of a small hydroelectric power development), elaborate safety precautions will be in effect, such that instantaneous shut down will be triggered by any deviation from normal operation. In addition, extensive shielding will eliminate any dangers of a roaming electron beam or various forms of radiation.

The Linac will be a source not only of energetic electrons, but of other particles and radiation as well. This is accomplished by placing various targets in the line of fire. When the electrons encounter the target nuclei, certain reactions may take place which will result in the emission of a neutron or a high energy X-ray. These secondary particles may then be utilized for different research projects requiring particles other than electrons.

Increasing the versatility of the Linac will be a focusing arrangement composed of massive magnets which will be capable of deflecting the electrons into one of six different channels. This feature facilitates the simultaneous maintenance of several experiments.

For those interest in the physics:

Visualized at present are three experi-

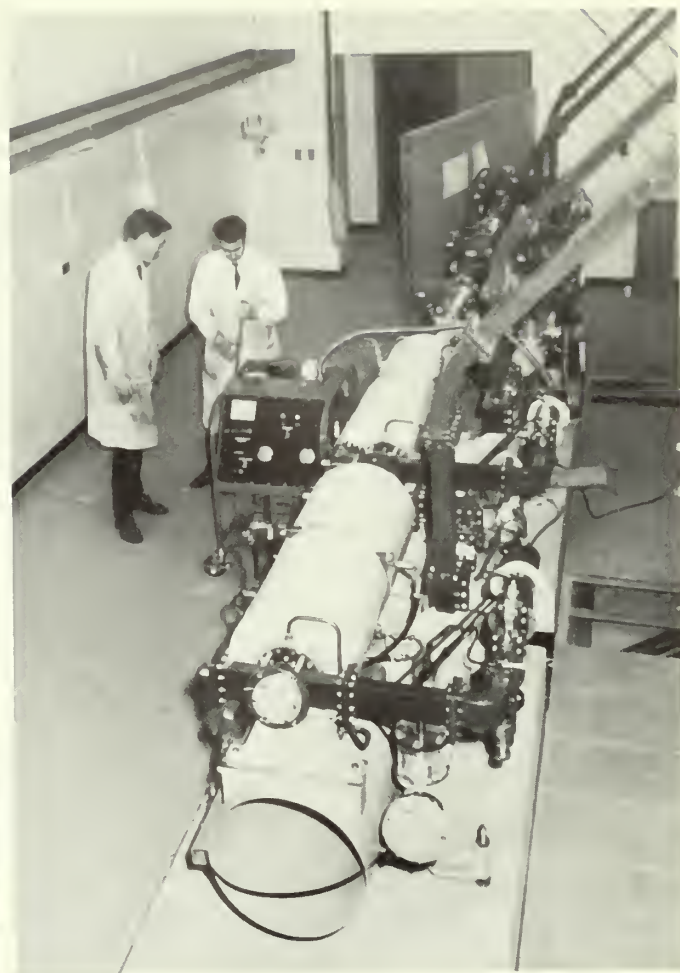
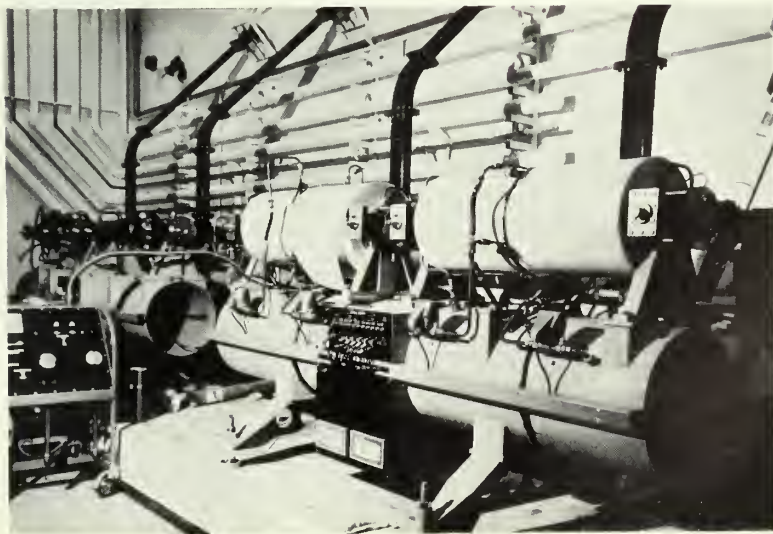
ments investigating the interaction of electromagnetic phenomena and nuclei: photodisintegration, neutron capture gamma rays and electron scattering off nuclei. In photodisintegration, the shell model of the nucleus is brought under examination in the following way: electrons from the Linac, impinging on the nuclei of the target, are accelerated and hence radiate high energy X-ray photons. This photon soon smashes into another nucleus, knocking out a neutron. The energy and angular distribution of the neutrons are observed and this gives evidence of the state of affairs in the original nucleus (i.e. the structure of the shells).

In neutron capture gamma ray experiments the inverse phenomena is under consideration. Electrons from the Linac fly into some nuclei, knocking out neutrons and this time the neutrons, hitting other nuclei, give out gamma rays. Then the energy and angular distribution of the gamma rays are analysed to provide information on those abstract properties of the nucleus — spin and parity.

Elastic scattering of electrons off nuclei discloses the probabilities of nucleons jumping from one shell to another in the nucleus i.e. transition probabilities. If the energy of an incoming electron is right, the nuclei will grab up its energy and one of the nucleons will make a quantum jump in energy. Hence, knowing the electrons' energy

and other experimental information, the probability of a jump occurring is ascertained.

The acquisition of this million dollar marvel, which will even have its own computer, is anticipated to escalate U. of T. into the nuclear physics big time, with an eventual Linac staff of eight or nine plus thirty to forty graduate students. Currently the U. of T. nuclear physicists are confined primarily to the laboratory at Princess Margaret Hospital, but when the Linac goes into full time operation sometime this year, Toronto should rank as the foremost university nuclear physics center in Canada.



A LOOK AT MATHEMATICS

Modern research in mathematics seems to become more and more abstract. At Toronto, research is carried on in the fields of pure and applied mathematics as well as statistics. The former may be considered as the art or science of making deductions from given statements. Subjects studied include Algebra, Geometry, Analysis and Topology. Of course, no relation exists between some of these names and the corresponding subjects studied in high school. The latter field, on the other hand, seeks to apply mathematical techniques, usually, to idealized physical situations. Furthermore, significant interrelation often occurs with theoretical physics. It is the abstract quality of mathematics that enables one to seek out the essential relations of a problem and then apply all the general results of the mathematical theory. To do justice in explaining some relevant research in almost any of these fields, one would have to address his remarks to a mathematician, usually to one specializing in that particular area. But perhaps we can sample the flavor of mathematical thought if we let our minds be carried a bit beyond high school geometry.

It is surprising to realize how many people feel that the subject of geometry began and ended with Euclid. Although it is true that the subject was more intensely studied by the Greeks than any other branch of mathematics; and that, after Pappus, the store of knowledge remained essentially constant for many hundreds of years; yet the developments of geometry in the last one hundred and thirty years have completely changed our ways of thinking about the universe and the nature of physical space.

The University of Toronto Mathematics Department is fortunate to num-

ber among its faculty members a man who is in the forefront of research in the development of pure geometry — Dr. H.S.M. Coxeter. Dr. Coxeter has been on the faculty at Toronto for thirty years. During this time, he has been a visiting professor of mathematics at Notre Dame University, Columbia University, and Dartmouth College.

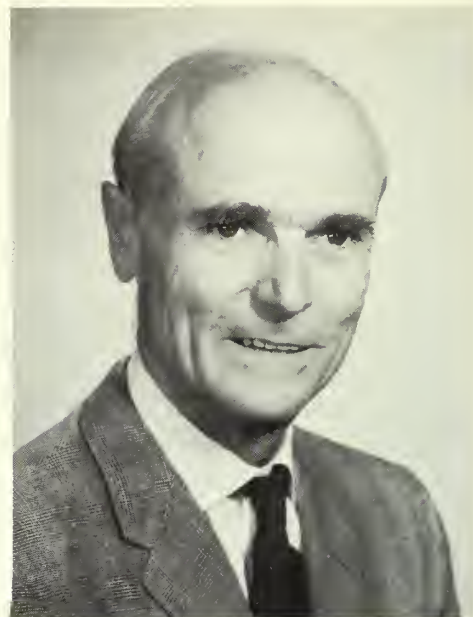
Dr. Coxeter recently wrote a paper for the *"Annali di Matematica"*, an Italian journal that publishes research papers in mathematics. The title of this paper is "Inversive Distance", and its subject matter concerns a method of measuring distance in a type of geometry known as Inversive geometry.

In inversive geometry, the essential concepts are points and *circles*, rather than points and *lines* as in Euclidean geometry. The *inversive* plane may be considered to be an extended Euclidean plane, or it may be developed from the axioms peculiar to this geometry.

Suppose you have a circle, with centre O and radius a , and a point P that is at a distance x from O . Now change that point into a point Q , which lies at a distance (a^2/x) from O along the line OP . If you do this for every point in the plane, you have performed an *inversion*. (Note that points on the circle don't change in the transformation; points outside go inside and vice versa.)

The study of this geometry is concerned with the relationships between circles that are unchanged when transformed by inversion.

The idea of "inversive distance" is defined so that two non-intersecting circles, which are at a certain inversive distance retain this relationship after inversion.



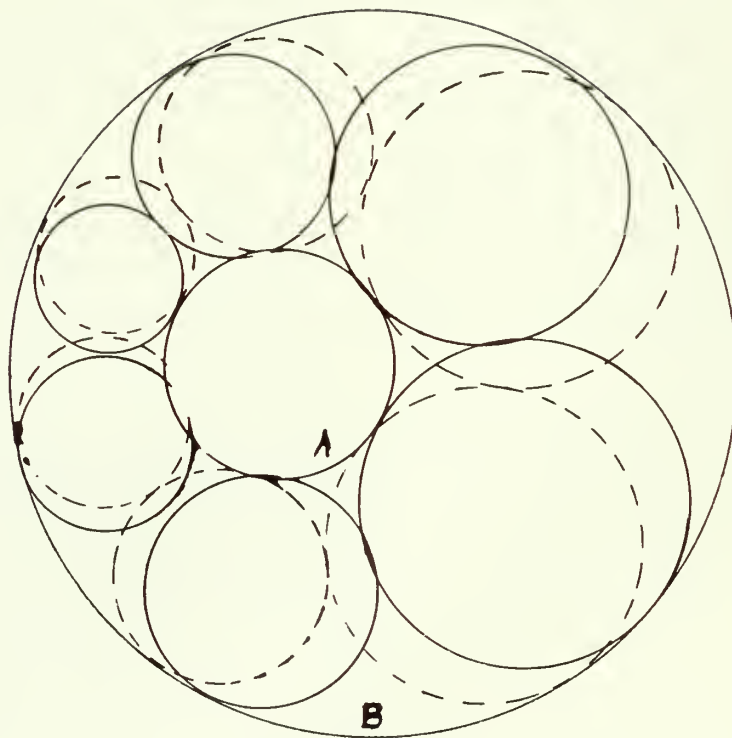
Dr. H. S. M. Coxeter

Under the inversion transformation, circles are transformed into circles; intersecting circles into intersecting circles; tangent circles into tangent circles; and non-intersecting circles into non-intersecting circles. But more specifically, special inversions may change two non-intersecting circles with different centres into two concentric circles. So any results about inversive distance true for concentric circles are true for all non-intersecting circles.

Dr. Coxeter shows an interesting relationship between the inversive distances of circles A and B in a figure (see "below") investigated by Jacob Steiner, a 19th century geometer who noted that, given A and B, if the ring of circles "closes", that is, if the last one touches the first, then the ring will "close" *no matter what the starting point is!* This follows from the fact that the figure can be inverted into two concentric circles with circles of equal radii forming the ring (like a set of ball-bearings between two cylinders), the inversive distance relationship being the same for A and B as it is for the two concentric circles.

Many people often wonder about the immediate practical use of some of the concepts in pure mathematics; inversive distance can be used to solve certain problems in the theory of electricity and magnetism. The expressions for charges between cylinders can be found in terms of their inversive distances.

Modern geometry is certainly a fascinating field of study. The hope lies herein that the reader may be encouraged to look further into the beauties of this engrossing subject.



Given two circles A and B; if a "Ring" of circles as shown (solid lines) can be drawn such that the last touches the first, then any other Ring (broken lines), no matter what the starting point, will be such that the last touches the first.

THE MOLECULAR BEAM

by Jacques Deckers

Chemists have long been investigating the mechanism of a chemical reaction; more recently, however, it has also become possible to study the mechanics of a single reactive collision. The "ultimate" experiment which one would dream of performing one day would be to take a single molecule, keep it in a fixed orientation relative to another molecule and force it to approach the other molecule with a given velocity while being able to observe and measure quantitatively all parameters relevant to this system at any instant. This would provide us with a complete description of the interacting pair of molecules.

A tool has now been developed which allows us to carry out an experiment, inspired by this "ultimate" experiment, and which might yield nearly as complete a description of the collision as we wish to have. This tool is the molecular beam, which can be defined as a stream of molecules all moving with the same velocity (speed and direction) without suffering collisions. If the molecular beam is directed onto a fixed target molecule, or crossed with another molecular beam, the observed fate of the molecules having suffered a collision is the statistical average of the result of a great number of collisions occurring between molecules having the same initial velocities. An analysis of the spatial distribution of the molecules having suffered a collision, and a determination of the chemical identity, the internal state and the velocity of the products would permit one to reconstruct the collision and to estimate the interaction which has taken place during the collision. The amount of

information which can be obtained from such a study is vastly superior to whatever conclusion may be drawn from a study of a gas phase system in a reservoir where the observation of the result of collisions is the average not only over orientation and impact parameter, but also over all relative velocities.

Not only could reactive collisions be investigated by this method but the study of other types of collisions have already taught us a great deal about the molecules themselves and about energy exchange between them.

In order to make an intelligent use of any research instrument, its method of operation, and the basic principles underlying its working must be well understood and its characteristics well established. A typical molecular beam set-up consists essentially of a source of molecules, a set of aligned diaphragms to define the beam by eliminating all but those molecules accepted by the diaphragm openings and a detector. A further requirement for a molecular beam experiment is that of a good vacuum system so that the molecular beam will not be scattered by collisions with background molecules.

The sources which were designed over the years for the molecular beam can be classified under one of the three following headings i) effusion type sources ii) neutralised ion sources and iii) supersonic nozzle sources. Let us briefly review these sources and indicate the advantages and limitations of their use. The use of supersonic

nozzles as molecular beam sources was suggested in 1951 by Kantrowitz and Grey.

The principle behind the suggestion is rather simple. When a gas is expanded adiabatically it cools down, hence the internal energy decreases but energy must be conserved and whatever energy is lost by the gas is transferred to the center of mass. The random motion of the molecules is transformed during the expansion into directed motion. We thus obtain a stream of molecules with a velocity directed along the beam axis. If now we align a series of diaphragm with the nozzle axis a large number of molecules will have the right direction to ultimately 'end up' as beam molecules and most of these molecules will also have velocities very close to the stream or average velocity.

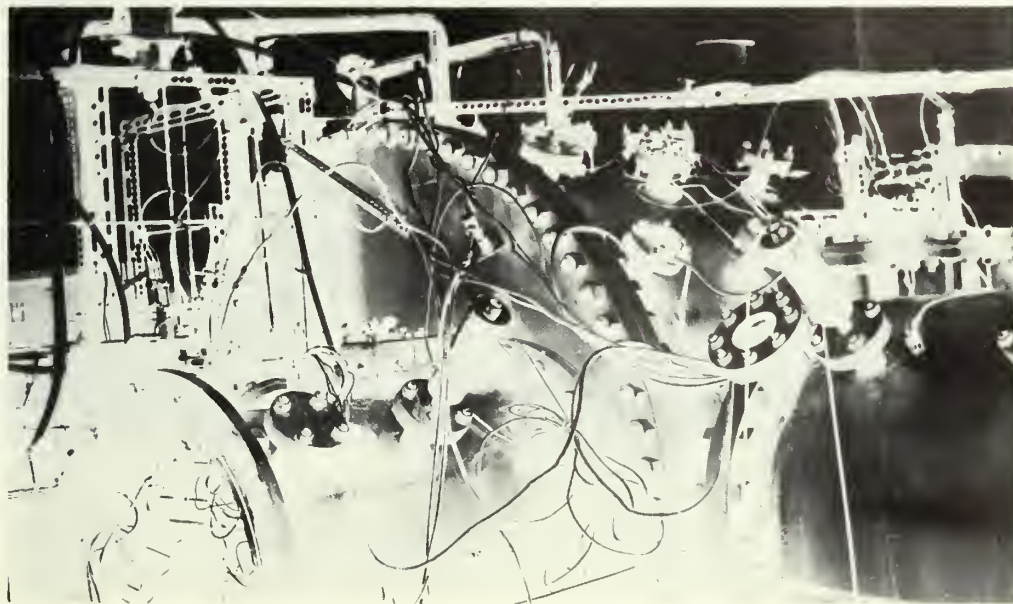
One can picture the process of expansion as one where due to the pressure difference gradient, molecules suffer more collisions from behind than in front and hence acquire directional motion.

In the Department of Chemistry at the University of Toronto we are interested in the study of gas-phase scattering, and hence most of our experiments involve directing a beam of molecules onto target gas molecules. The target molecules at this time are contained in a scattering box although fairly soon scattering between crossed beams will also be studied. The type of experiments involve all types of collisions. Among them let us mention the measurement of the scattering of molecules as a func-

tion of the velocity of the beam molecules. A reactive collision between beam molecules of N_2O (nitrous oxide) and target CO carbon monoxide producing C_2 has been observed and inelastic collisions between an Ar beam molecule and CO_2 target gas is being studied (in collaboration with Professor J. C. Polanyi of this Department) by observing the infrared emission of the CO_2 vibrationally excited during the collision.

With the collaboration of Professor J. P. Valleau a model has been worked out which attempts to explain the observed behaviour and properties of the supersonic molecular beam.

The Molecular Beam Machine



PHARMACY

by Stan Jackson

Pharmacy has always been concerned with the preparation and distribution of drugs and medicines. Today it combines the art and science of preparing drug dosage forms and the development, from natural and synthetic sources, of suitable and convenient drug products for the treatment, diagnosis, and prevention of diseases.

In the search for biologically active substances, undergraduate students are carrying out a survey for drugs no longer in use but which may contain some interesting or useful constituent. The current objectives are the isolation and characterization of new natural products. Concurrent with the above program, investigations of optical rotations are being initiated in an attempt to validate a theory of optical rotation proposed by Dr. Duncan in 1961.

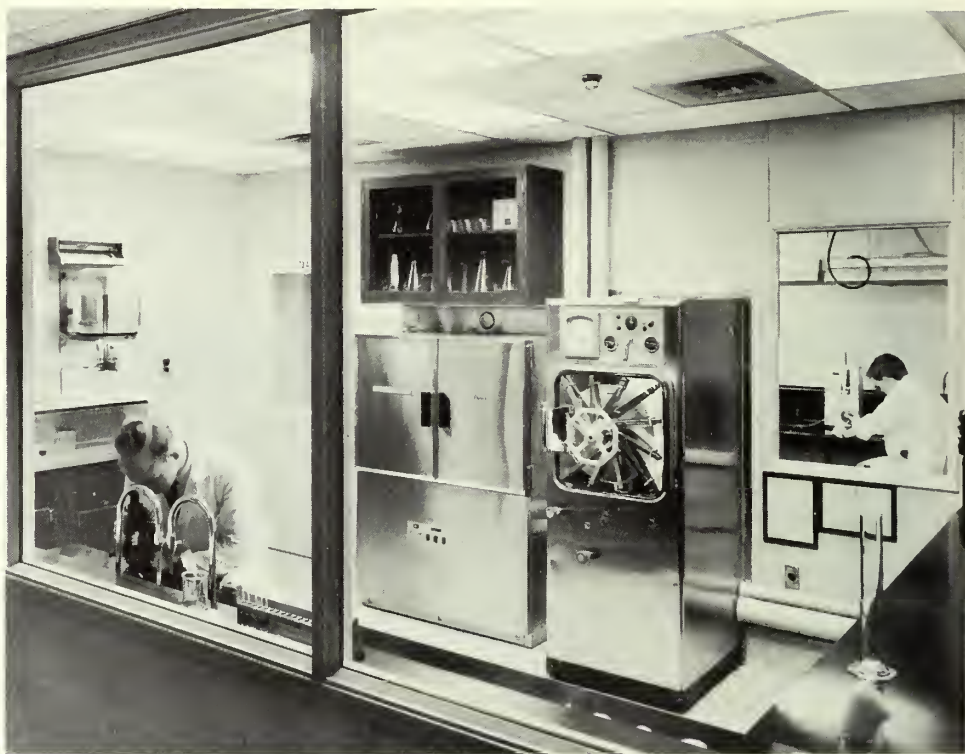
Since 1956, work has been in progress involving the study of the cardiotonic principles of *Star of Bethlehem* (*ornithogalum Umbellatum*). Initial work was concerned with the extraction, purification, and crystallization of individual principles and the relationship of structure to biological activity. The effect of plant growth hormones is also being studied.

Research is also being conducted on the isolation of peptides and peptide-like compounds from natural sources in the hope that these compounds may possess useful pharmaceutical activity.

The dosage form in which drugs are employed may have a profound effect on drug action. Research is being carried out on the mechanisms of decomposition and stabilization of drugs, the uses of ion exchange resins in the treatment of metabolic disorders, and

the influence of solubilization on the availability of drugs.

This represents a mere scraping of the surface of research being done in Pharmacy here at the U. of T. In the years ahead we can expect great things from the Faculty of Pharmacy.



LITERARY AND ART

*O God, O Venus, O Mercury, patron of thieves,
Lend me a little tobacco-shop,
or install me in any profession
Save this damn'd profession of writing,
where one needs one's brains all the time.*

— *Ezra Pound*

STEWED MILTON
OR
THE MORALITY OF A WELTERING PRUNE

*So it appears to the wrinkled mind,
in the cavernous pit of a weltering prune:
gout-ridden Milton
is beating-the-Hell-out-of one two-bob wench
who solicited him near the Drury Land stews —
her with such flaming black headlong strands.
Blindly he fears her:
an out-spread brooding abbess of the streets
with her bottomless perdition.*

Prune talk.

Prune talk.

*At four (with legs crossed)
he'll have strumpets and tea;
and the other provisions?
Apples float down the black syrupy Thames,
but Milton has lain-in inflammable sack,
plum-porridge and hare pies and venison pasty —
that Milton whom self-blessed prunes have condemned.*

Ian Carruthers

URSULA

*Within the convent garden wall,
Ursula,
veiled by the lyre's strings,
listens for the Sun song
in the sadly bitter shade of chastened arches;
but she watches
the shadow of a rose
crucified
on a trellis of a thousand gilded crosses
flush against the stucco cheek
in the counterpointed garden,
hears
an iron pear
toll high in a tree that buds with sparrows.*

*Pray God she doesn't pluck it
(lyre, rose, pear)
lest her guilt
make her a sacrifice
to His overwhelming mercy.*

Ian Carruthers



G. Akison

ODE TO A CROW

Man!

*my heart hurts incisively, like a surgeon's scalpel has cut it,
and i'm tired — like i could sleep right here on this park bench,
except the cops might run me in — or arrest me.
you speak, bird, and i know it's a message for me.
"caw" screeches forth
and it speaks the wonders of the way-out places.*

*give me a drink of rot-gut, mabel,
cooled in a box of virgin ice,
and let me taste the black deep crowville
— the way-out birds.
pass a glass of likewarm high juice,
fuel to send me up with you,
up and away from tired globe earth.
— this bench is hard.*

*fade-out, osmosis, amnesia,
like you've always been free of what bugs man,
the pain, the not knowing,
— and broads,
age, death, a virus or lung cancer;
a thought brings sorrow,
all's despair;
beauty is ugly,
love loses its hair.*

*split! split! this juice is a drag.
i'm making your scene, but with the cool words.
let a hip message clue me, transcend my thickness
— like hit my soul.
like i'm here.*

Man!
the sweatshirt of night clings to my senses
but the way-out light is switched on inside
and i can see, i dig!

lay on more coolness, hip crow;
my brain, my soul, are stuffy with blank unknow.
Why do you stop?
i should stop now
like this.

man, to jump into infinity like an apollo shot
and leave behind the grimy earth
of five-day weeks, nine to five,
of conformity and motherhood,
and hard park benches,
and other drags.
to go like while you sing
not to hear the last "caw" but to split from life and find out myself
beyond the spade.

and you'll keep screeching, cawing, preaching.
keep the cool words flowing on.
like the hip bird who sang to ancient beats
and gave a shot to tired souls
when feeling blue among the squares
and made the crazy hermits hip
— they dug —
who spoke the way-out words before wheels
will always wail.

hold on! what's that flies through the air
towards us!
why does his beak droop,
— his eye glaze?
why the pain in his contortion?
like i saw red on his head, drops,
just before he toppled from his perch.
and that little girl who bends over him
down there
smiling,
with more stones in her hand.
WHY DID YOU KILL HIM, LITTLE GIRL ???

Gil Bellavance

*The boughs were resolute and gray, and
slashed the sky, and cut the clouds, and
filled the earth with roaring.*

*They tore each other ragged, beat, and
clashed as solid cymbals, weeping
angry tears of sap.*

*The earth is dead, and heaven's fled
away behind the gloom-dense settled
sky, but we can dance, and*

*intertwine, and break each other
in despair, in revel wrought of
doubt, and death, and will to*

*question why; and we will kill
injustice, that ungodly grayness.
We will bleed each other*

*dry of cruelty, and stand in
staunch and painful pleasure in the
lashing, jagged wind.*

Mary Liz A'Court

PARTING

*Years ago it was spring;
The clouds printed
Red-shifting shadows
On the pastel sunlight*

*Now we stand
Under the lead-sinking sky,
Our fingers folded
In overcoat pockets.*

Paul Darby

FOR MARY BECAUSE IT'S AUTUMN

*If the world has been rainswept
into a must-crowded corner
of history;*

*And we are all groping victims
of futility, shackled to the
eyeless night;*

*If our words, our thoughts and
dreams are flapping skeletons
of forgotten meaning;*

Then how can you explain a kiss?

Paul Darby

LANDSCAPE

*Daisies crying, blast
Emerald grasses at the passing shepherd.*

*Purple sinking banks
Lie in sun breasted crags, scar-like, breathing
Fragment finger trees
Touch the pool, and the gull screams are children,*

*Careless footpaths haunt
Valley peace, hand in hand now go whispers . . .*

Jan-Elizabeth James

*Doubt, drifting downward, calls halt
To the aspiring soul. Step follows step,
Leaden-legged; the spiral seems endless.
Turn back! the tunnel pulsates:
There is a river of concrete flowing,
There is a river of concrete sliding,
There is a wall of concrete,
There is a wall in my face when I turn.*

REVEILLE

*Silken things, thread-thrown, spider-spun,
Spill sunlight-steeled
Down light-coiled breezes.
Peace, white cloud peace,
Gold light peace, hangs leaf-dappled
Through the dew-draped dew-dropped
Silk-spun pearl strings. Sunlight,
Sword-like, slits the leaf-mail,
Dances in the archway of my eyes,
And charges me with living courage:
Fresh consequence and sorrow
Will find me, and avenge — but not today.*

Mike Schoenborn



Barbara With

Christine Holland



POEM FOR M. N.

*It should have to be a house
Where it is hard to tell
The windows from the Renoirs on the wall,
Where yellow fields and girls
That raid the yellow fields
For their bonnets' sake
Would flat themselves against the panes
And ask to be let in
For just a minute please to see
The mistress of the tall dark man
Who only occasionally comes across
Into the village to fetch supplies.
It should have to be something hard to tell
The mirrors from the wedding photographs
And it should be impossible to say
Which one of us is happier.
It would be best in an illiterate land of listeners,
Where I could make our living knowing the alphabet
And writing every second Wednesday
Marriage contracts in a village square,
And with one wise cow for milk in the back yard
Whom we would not allow
To see our Sunday steaks.*

T A Lozar

THE MOTHER TONGUE?

*god -- betera — betra — betst!
go-fo Aelfred, of-slea the beast!*

*Thus before the great vowel shift
Gave 'a' and 'e' a forward lift.*

*an, twa, preo, feower!
me, min, us, eower!*

*Ye mothers of old, O what holocaust
Fissioned forever those vocals lost!
What post-diluvian pre-Freud pregation
Instilled in us this oral fixation?
Those tongues that snapped out 'ash' and 'thorn',
Were they really like ours when they were born?*

G Noonan

*When we stood upon a cliff, low,
near water.
The sun was nearly gone
and voices were still.
That time of clear purple
between shining-yellow day, and night,
when silence demands silence.*

*My hand on your face touched you —
touched you almost in awe.
Your rough eyebrows, darker brown in twilight,
always moved me. A few hairs,
sandy by daylight, needed smoothing. kindly.
Your eyes were dark then, and deep.
Touched with the same pride and happiness, we gazed until
Gladly I nestled my head on your shoulder.
That time there was no hurried searching,
no quick desire to touch, to take,
But far above, the peace of you and me, together.*

Sue Corben

NINE HAIKU

*A kingfisher dove
Into the water and came up
Without the moon.*

*Snowflakes:
Fragments of silence weaving
A deeper silence.*

*It snows softly
Over the marigolds my mother
Forgot to pick.*

*Painting the oak tree
With quick, flowing brush-strokes,
Cat-escaping squirrel.*

*In the river of spring,
Silently I cleanse these
Winter-weary hands.*

*The sound of crickets
Strikes a flint
In the summer forest.*

*A rolling snowball
Gathers up the russet leaves
Of yesterday's autumn.*

*Hearing the dewdrops speak,
It is the silence of the
World that sleeps.*

*Far over the hill
A child's laughter . . .
Muffled by falling snow.*

Paul Gurofsky

much later: in an early morning stillness
 . . . after white watertanked streetcleaners
 had chased the residues of a year with a pleasant spray
 through sewergratings and into the malignant eyes of rodents;
 after unclamping glued lids and freeing of his snarled lashes;
 only after he had lain a long while
 and ivy begun to emerge from his temples
 snuggling itself into chisellings of his hewn limbs
 did he see himself, cheekdown on the cold wet redcobbled street
 staring at shadowhatted lobes of stone
 and seeing traytiered loaves, good in the hot smelling ovens.
 He had walked with her through her soft hawthorned words
 and the limpid longfinger gestures of her moist bayonet touch
 and through the searing leaves passed stump chimneys, drifting faintly.
 His large dark eyes Remember the hazed wisdomtooth moon
 the night he slashed his flesh with terrible glee
 on bigswathed glass scythes rocking gently to and fro . . .
 but on a different while strolling home from the enloafing bakery,
 he felt a hump of her flesh rise hot broth and into him
 and when he reached the stairs you descend to touch the slaking tunnel
 and the unmade bed among stale strewn other loaves in a candle web
 at its end, while she grasped their lengthening loaf, he took her
 with her morphine body stuck on a black stalactite
 jutting gruesome behind his eyeball
 near his left earhole's prominent skull

when

Remembering how he groaned entering her body for the first warm time and how after when she had rinsed her socks and panties in the used sink and reentered through the doorframe from the queer tunnel he looked at her ungiving eyes with debt in his own and covered himself where he lay
fragrant colour stiffen over the third waking continent of his yearning.
Gaze up:

Thirty-Six

*A big hard thumbnail picks a big dry nostril
whose shoulder leans on a drainpipe between two walls;
the nostril dilates expectantly,
and listens*

*In cast yellow light a hoarse mealey voice pounds
a sharp gulljabbing one, as the older woman
with the crowfooted face and the steelwoolrubbing crotch, rises from a
man in her bed who grins as he clutches a rasped raw phallus;
as the girl's ass slips down over the slick steaming unwashed sheets
of her testicled calicle.*

*And as he gazes up and hears the neighbours
quarrel vomit into each other's mouth, his arm struggles out
of his bed of love and hurls him howling with green eyes
in a halfit hysteria back down the cylinder
mimicing the torn ugly sound of his soul;
discards him into the fragrant cobbled street
illuminated with filled China bowls of white
hung in endless moving strands
through the joyous silence interlacing around him,
as he weeps . . .*

Daniel Goldenberg



Mandolin — C. Pearce

*when i fly through the wind
flaunting the twisted air,
and my breath whorls away
with yours
a wreath too crystal for tormented air,
and my face
whipped blood-pink from the cold
that i bear
like a child sensing
through pain only pangs of pleasure —
i thank you for this velvet care.*

*i thank you that the air
as silvered swords
up and down, around,
spurring away the cold;
and that the hill-fast trees
writhe in the humming
as we fly,
you and i.*

*i love you that i suffer
this cold day
prismed to infinity:
each one colder, more frenetic
than the last;*

*i love you that my being
once sensing
you and what you were, will be
need never search for beauty more;
i love you that you know
cold and wind and me.*

*cold and colder whirls the wind:
your wish.
do you as i feel keenly purged,
fragmented?
or do you merely spin
a silvered web
to freeze the frail,
the memories?*

*though you may never think of me
not then,
not now perhaps;
though i be but
a fantasy, a dream
to your reality —
i love you still.*

*if you do not think of me
i still can think of you:
how you were, and are, will ever be
as real as the wind,
the cold that breathes
to chill, to weave
this life,
a hope,
infinities.*

Janis Rapoport



Black King — Darla Hesse

TAILS

*i am a wee lizard,
i lie in the sun,
when one tail has dropped off
i've grown a new one.*

*the old one that's dropped off
is part of me yet,
i'll save it to guard me
from heat, cold and wet.*

*for things from the past
must be kept or you see,
one morning i'll wake
and i'll find a new me:*

*a me that's not part
of what's gone before,
a me that's beginning,
just cast on the shore.*

*now it's not that i carry
all old tails around,
or even try keeping
some bits to me bound.*

*but they make up my walls,
my floorboards as well,
and even my ceiling,
yes, they're my whole shell.*

A KISS

*You lean against me, your head
Heavy on my shoulder
Warm and real*

*Auburn hair, ample and deep
Like harvest corn at sunset,
But tiny, helpless at the nape
Like a sleepy kitten.*

*For a moment, one breath
Then rose-scent.*

Peter Knowles

Winding Road — Maureen E. Farr



*I was there when christ was hung upon his tree.
and I was there when god stood
astride the firmament
and madly laughed
with aching sides
and sadly laughed
with tear-filled eyes
at something humble, humbly called
northamerichristianity.*

*I was there when billy graham
screamed the end was near
and asked why don't we all
come down from seats
and stand like sheep
before a stage upon which he
alone was king.*

*I was there when papal cries for peace
were faced with reverence
and flanked by jolly
laughs and vicious scorn.*

*when the dove was singing
I stood among the tiny crowd
and chanted silently,
while tv-radio men by
piping pools of mediocre filth
made hearing difficult.*

*I was there to hear the last
rejected altruistic cry
be buried by the blatant shout
to rape the world.*

*I was there when christ came back
into a small green garden
set among great lakes
to bring a renaissance of love,
— only to be hung again
while still a youth.*

*I was there when god stood
astride the firmament and laughed
at northamerichristianity
with tear-filled eyes that
said much more than laughter*

*O, I was there to see him
turn away foreverly
as sadly futile tears
dripped down
and drowned
the world.*

Bill Bell

PHILIP'S GARDEN

A brown and white kitten struggled through the bushes at the far end of the garden. Philip, raising his thin Italian head, watched the cat lift its fore-paws off the ground and strike with round-sweeping punches the dry, veined leaves above its nose. Awkwardly, Philip folded the book he was reading over his bare knee. The grass smells as if it were baking, he thought, it has such a full, sharp smell.

There were four trees in the lower garden, forming a square. He sat under the pear tree — the other three were apple trees — on an aluminum folding chair. It was a very large garden; and private, too, with its high hedges and trees and longly shrubbery surrounded by orange, trumpet-horn flowers. Large enough that a robin with a breast more brown than red could fearlessly run across the grass, stopping every few feet so that its tail descended and its unnotable chest became prominent. What was it he had just been reading? "A fanatical disciple of Jean-Jacques Rousseau, he had a lover's affection for nature, the fields, the woods and the animals." Philip nodded his head. Nature, he thought, beginning to draw in what to him were familiar lines of reflection, nature should be loved with physical passion,-

Would she leave him?

- with something almost sexual, something erotic. One should say, I want, I-

Would she ever really leave him?

-desire all these trees, flowers, birds, smells, colours. Or was that too strong, too much of a sublimation, a replacement? No, no, he said to himself, it's how I feel, how I react.

"What have you done with my glass?" a soprano voice asked from behind the bristly hedge.

"God, I don't know. I didn't touch it!"

This from Mrs. Mele, a deeper, more crackling voice than her daughter's which could now be heard: "But where can it be? I left it right here!"

She sounded rather like Frances, Philip found; Frances, his wife, who had gone to her friend Pat's for a few days "to think things through", who would be sitting now in that horrible red and yellow living-room with the alabaster greyhound staring from a corner. Frances talking and talking, gradually opening wider to Pat 'till they were very, very intimate, and, of course, scornful of him, Philip, the problem.

"I am bored with your trees and your plants and your: 'Come on outside and see spring for the first time in your life!'" she had said, rinsing the nuptial Wedgewood plates, hating, it was obvious to Philip, the smell of liquid detergent and the formless food particles that gathered around her hands each time she touched the water. Saying nothing, he looked at her brown hair and her black, winged glasses. "It's all very well to see these little

things, these oh so fine details, once in a while, Philip, but not every minute, darling; it's unbearable. I mean, can't we talk about something else just once in a while? And if you have to see all these things" — she wiped her forehead with the back of her hand — "well please, honey, don't tell me about it, all right? It drives me up a wall!"

She left the next morning, very cheerful, kissing him hard on the cheek so that he could feel the formation of her horse-like teeth. "A few days!" Frances cried. "A short resting period after two long years of marriage!" And off she had gone with the car — he couldn't drive — leaving him with his garden. "This is Philip's garden," she used to whisper to visitors. "His open-air mosque." He remembered a day when he had leaned across the white metal table with the sunshade to where she was sitting writing a letter and had said — how did he phrase it? — that she put all his flowers to shame. He knew it was a clumsy and trite compliment the moment he uttered the words, but was there any reason, he wondered, why she couldn't have simply smiled and thanked him, instead of laughing at him and saying what an ass he was?

The cat circled his legs shyly, and put its muzzle into the palm of his suspended hand. Philip tried to pull particles of grass and soil from the animal's fur but it shrugged him off. Becoming tired of his still, white fist, it crept to the base of the pear tree the

bark of which it clawed with cloudy grey nails.

In the next backyard a canvas lawn chair was being stretched open; here was Mr. Mele to join his wife and daughter. Through a bare, deadpatch in the hedge, Philip could see a white shirt and khaki shorts moving back and forth, and then two tanned hands around a glass of bourbon as Mr. Mele settled his body into the rainbow-striped frame, spreading his knees far apart to avoid the chilling drops of ice-water that were slipping off the glass bottom.

They would do a lot of shopping together, Philip thought, Frances and Pat. He could not remember Pat very well, but he could recall her apartment, the fact that she made coffee in an espresso machine, that she bathed herself in a green tub on iron legs, that she talked a great deal, mostly with a cigarette in her mouth, and that she described herself as a "bachelor girl". After her, how could Frances return to a garden, of all places? The answer was that she wouldn't come back.

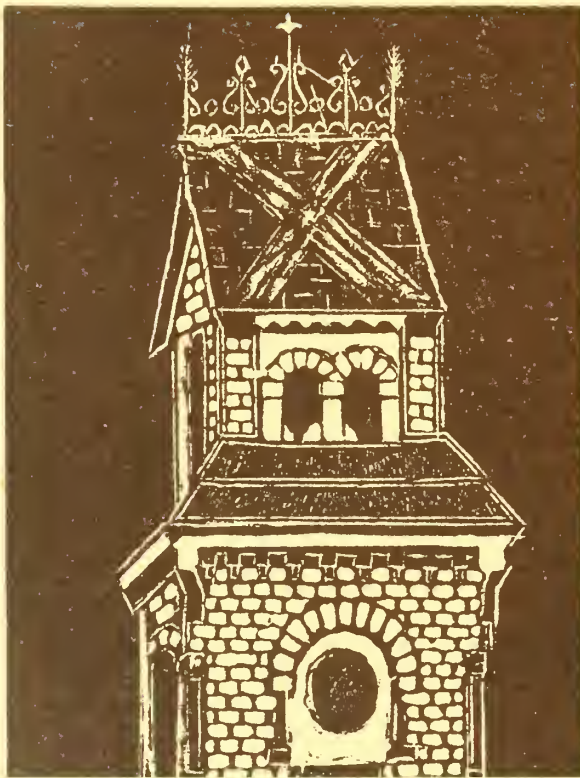
"Oh, but she will," Philip answered his own doubts; "you can get tired of bitter coffee and bead-curtains hanging in doorways." She would come home and see how pleasing the natural was, how tireless it remained. He imagined her scolding him for the house's disorder, quickly opening windows, collecting dust on her fingertips, finding clean

clothes for him to wear, and laughing, laughing now with affection at the evidence of his helplessness without her; she was wearing slacks as he saw her, and there was that faintly swelling mound below the elastic waistband that always made her stand up straight and say, "Look at how fat I'm getting!"; and he, himself, would protest: "No! Not at all!" For a second, his mouth could not find an expression, and his cheeks tugged in confusion. "Oh Lord," he felt. "What if she doesn't come back? What then?"

He would have his garden, he reminded himself; and his books. And since she would not ask for financial support, there was the house, the car . . . his income . . . "But is this compensation for the loss of a wife?" he asked that part of him making the inventory. No, went the reply, but it was what he would have. Some men were left with nothing.

The cat pushed back through the darkening bushes. Mr. Mele's eyes were closed and his mouth open. His wife, meanwhile, was trying, humorously, to pull the empty glass from his fingers, and his daughter was laughing because she knew that Mr. Mele was actually awake. Philip turned his book over, and, crossing his legs, decided to finish at least another chapter before the sun set. Perhaps two, if it didn't get any colder.

B. M. Kelly



University Tower — Maureen Farr

*One cannot simply talk his way
Into the end of things that matter,
Walk down a stairway to a door
And hope to exit through it to oblivion.
Thunder and castles toppling should attend
The end of things that matter.
Words are best for cursing words
And praising silence loudly,
They'll not suffice for loving you
And putting an end to things that grew
And were not merely said to be here or there.
Thunder and castles toppling should attend
The end of things that grew.
When there were signs in the sky
For the beginning of the thing
One cannot simply say, My Glad Friend,
Surely what remains is not an eternity, and
This is the end, and these
A b c d are the reasons why
And No, of course I shall not die
I shall forget so busy will I be
In all the important things I do, let loose my hand,
That I shall see the insignificance of you.
One cannot do that,
One cannot simply talk his way
Into the end of things that matter,
Walk down a stairway to a door
And hope to exit through it to oblivion.*

T A Lozar

*of death? oh I'd rather not,
if you don't mind.
Perhaps "the grass is green and grinning"
tst, down, down — something tasteful
say, "tossed tendons grasping in fright"
oh dear me no.
let's try "the wind that waved is hysterical
in the night"
no, no, restrain yourself
"the sun in sight is sunny" ah, or
"a spiralling scream of onrushing fever
that fades to a blazing blur in the eye
and revolves —"
NO.*

*Arrest this fantastical outpouring.
That's better. And since you insist
and what of, uh, heaven, wasn't it?
oh yes of course you're quite correct I
was mistaken,
death. the mocking skull, the fiend's wail
the last clutch
infinity zeroing in
to a fat void; the finger pointing,
and gone, all gone, not even in hiding, nor
squashed like an insect, but broken like
a bubble, and simply disintegrated
into atoms — no, no not I
not the spinning thrust
when my limbs tremble, I feel me almost
vibrating apart,
No! No!*

*hmm. oh yes, we were saying
"the air is fair with the perfume of . . . sighing . . . umm
and graciously flowers the way of the . . . dying? . . ."
Oh dear, that will never do.*

Nancy Emery

*A little wine, and then we'll whistle out the door
Across the roof o'eround and through the fog
Of simple minded fear-of-pain
And shout from tree to laugh of heaven.*

P. Nagy

*Come I will show you a god
With fiery horns on a scaly head
Six purple eyes; and a nose
As black as sin and running flame.
Chest covered with open sores
And the hair on his back
Thick so to hide
The cherubic wings
And quiver of pink arrows.*

P. Nagy

AN UNFINISHED POEM

*It is the image of your soul,
The smile on my face, the smile on yours
Reflects
It grows
In flaming intensity deep in your eyes
Searing sharp like the two-edged sword
Deep into my being.
Blood bubbling up to overflowing of pain and joy
Spreading o'er the space between us
Heated by the fire between us.
It is ours, our creation
Filling us completely
Now struggling to be born into the world outside of us.
Turn,
Turn back to back
Arms outstretched, our finger tips touching
And spread the smile in a circle
outside us.
My hands are restrained
My eyes are now hungry
My memory's failing
Turn, turn back again . . .*

Carolynn Bett

FULL CIRCLE

*You, the children,
who cannot yet see,
the womb which awaits you tomorrow,
Know it is unlike the one which creates you,
Know that your beauty is now.*

*And you, who love,
knowing all will be lost,
who kiss mocking cold, empty time,
Know, while you gather the colours of flowers,
Know that your beauty is now.*

*And you, who hold
the child in your arms,
who sacrifice, to bless new life,
Know, while your colour is fading with summer,
Know that your beauty is now.*

*And you, the aged,
who dare not to fear,
whose wisdom lies dead in the lessons of time,
Know, not the laurels of triumph now lost,
Know that your beauty is now.*

*And you, the thinker,
the vendor of thoughts,
whose future and past are but lies of the mind,
Know, while the truth is still warm in your blood,
Know that your beauty is now.*

*And I, the living,
who walks with all time,
through the present, the being, so loving and kind,
Am afraid of the horror seen hid in the sun,
And sing that all beauty is now.*

Alastair Sweeny

THE AGONY IS ALL

The realized,
and mind fulfilled,
The water to the sea,
The spirit spent,
too-easy death,
The human tragedy.

Who is the God whose appetite
feeds on my flames,
consumes my soul?
Who is the final being who
destroys my love —
created role?

And why the tree, now grown for me,
identified,
by me made known?
Why are its green leaves any less
than the aching flesh
which covers bone?

The waste, decay,
the uselessness,
A purpose unfulfilled,
The horror, tears,
the body's death,
Now pre-ordained, and willed.

Alone and afraid, do I find rest
in the world of my senses,
the blood of my heart?
Or turn I enslaved to the prison of mind,
where passion lost
is a life apart?

And am I a man if I am the measure,
instead of the distance,
instead of the sky?
And am I a man if all of my world,
can be washed far away,
with the dust in my eye?

The agony —
the test of growth,
The spring that dies with fall,
Creation, love,
and empty rest,
The agony is all.

Alastair Sweeny



C. Holland

AFTERTHOUGHT

*It was not, after all,
a particularly passionate romance,
but then, you can't expect everything,
and we had some great
conversations, about Life and Art
and Sincerity,
and deep things like that.
But always, at the end of it —
the evening — there was the
record of Miles or Thelonious,
or someone, and
the moment of physical
contact
when we were no longer-lovers
or soulmates
but only
two strangers
clinging together and
seeking — God knows what — but
seeking — and the record would end,
unchanged.*

*And eventually the day came when
he
taking the initiative
folded
his tent and stole away
softly
into the night
and I was left,
trying
to be heartbroken and singing
innumerable choruses of 'Poor Butterfly'
and like that.*

Ann Constable

WALLS

*I am a part of the great grey place
The place of stones. I live
In a secret cell, a wall of hate.
Somewhere a bird sings in the rain
Sings of sweet love. Its softling song
Startles the sentry, the sleeping guard
With thoughts of home, his mother-warmth.
Across the concrete his closed eyes wander
Eyes vainly seeking. I open his eyes
Wave to the soldier. Breathe
On his cold hands, his frozen fingers.
They raise in a wave, a final gesture.
The terrible sound slays the soldier.
The bird is still. He sings no more.
Only the hurt, the lasting silence.*

Mac Peters



REFLECTIONS ON CHILDHOOD

*When I was young and lacking friends,
I made the ripples on the seamy waters
Of dikes and ditches my mates.
I talked with the whispering rushes;
I sang with the croaking frogs.
Running through warm sand,
(just missing broken glass
with my bare feet)
I'd plow the Frazer bank
Of white fish bones.
I'd sit upon an old dry tree
(fallen years ago — ant eaten)
And play with sticks and bones —
Much, like I'm told, my ancestors did!
I'd watch with envy how the tide
Brought in the waves to kiss the shore.*

*Cold darkness sent autumn winds
To fetch me home.*

*But I would sit and watch the tide surge,
And the seagulls dive,
And smell the putrid seaweed
Cast upon the shore,
And the seamy, slimy ditch,
And listen to the wind moan,
And the trees whisper.*

*Cold darkness sent autumn winds
To fetch me home,
And in the wind I heard my name.
I left.*

Maria Stebelsky

The chaliced silver
Holy pawed
Tipped in a gully of dead white stumps
Her young hands *Veinless*
Ringless
The dark wine spilled
And trickled down scar plugged pores

Shrouded in dirt caked rags
She had come
Before the others *Halo'd*
muttering fiends
Muddied the sacred water
Crossed a puzzled virgin
Clutching snoring saviour
She took the chaliced silver
Spat
and ran.

Fifty-Two

HUMPTY/DUMPTY

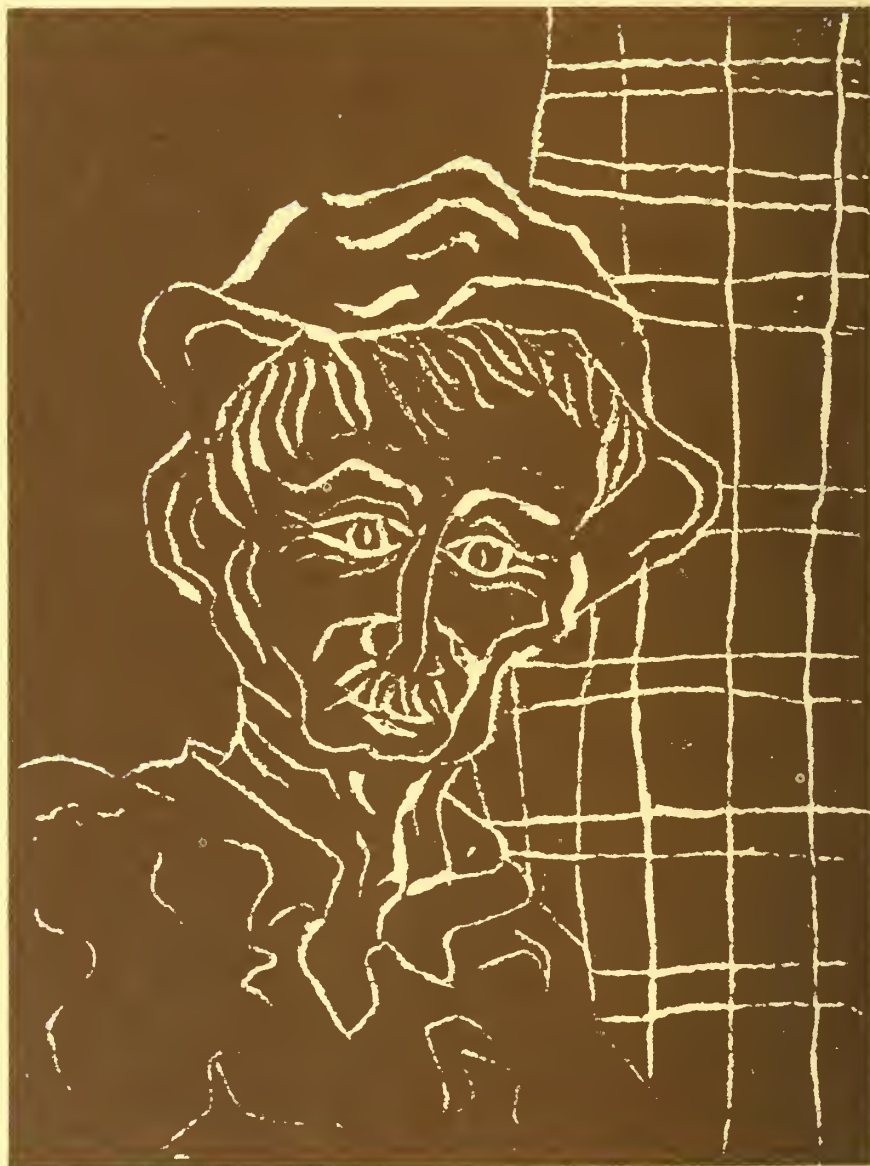
*ya really got a hold on me
but the idiot child
with swollen wet tongue
mongoloid eyes
still chants over the sun-dried
scattered parade
of trampled ants*

*sticks and stones may break
my bones . . . the golden-haired
daughter tattling
dead syllables
and her degreed begetter
pretending
he has no daughter*

*ya ain't nuthin' but a houn' dog
the 38 year old baby
ramming his red tricycle
into a bronze casket
in the parlour
shot him in the head, marshall,
between the eyes, so hang me*

*on mute flowered hillsides
leave your mixed unnaturals
live modern, love kool
no more charred brains
in the sperm jug.*

Helena Turunen



C. Holland

SURRENDER

*Soft is the battlefield of dawn
So still my lover lies
The grass is cold with bloody dew
Arise, my love, arise.*

*The wind is chill, there is no sound
On the battlefield of dawn
Save falling tears, for other days
Now gone, my love, now gone.*

Michael Woods

HMM...???

*Doors creak open,
close softly.*

*Hard steps lightly
move towards*

*The dark staircase,
plush carpet*

*Muffles the sound
of gold guilt.*

*From the living room, from my chair,
I watched her ascend to our bedroom,
And the only empty bed —*

*I sit, bless her,
drinking calm.*

John Lamenzo

*If I could see the city now,
With timeless eyes, the former place,
Before the desecration, unity, sterility,
Without the bitterness extant in my race;*

*If I could wear the jasmine in my hair
And, sipping the sweet, strong wine on silken pillows,
Drink a smile to the apricot flowers
And recline beneath the West Lake willows
Or walk with proud-gowned Mandarin philosophers
Past grass-green terraces,
Through maze of courtyards
Or tread with careful paces
Through arbours of plum and pomegranate
Among snakes and streams
And wild-tangled chaparral and rocks,
To a temple of moonlight and sandalwood dreams;*

*Yet, even if I could return
To a culture writ on ancient pages
My lifetime never could embrace
The calligraphic artistry of ages,
The literacy of the Shan-shui
Nor the ascetic ways of the shaven sages.*

*But to see just once, to know today,
The blood-won affluence and lore
Of my Imperial fathers, this alone
Would be my time-thwarted desire.*

Clare Chu

THE CAD

*Harbored in an elegance
Of briar pipe, lightly puffed
And she, softly sighing
Adoring whom sips a low scotch
"O! Ovid, poems?" with eyes
To which, "My dear,
You have exquisite legs,
Some sherry?" She,
"I shouldn't." pouring
He "one last," and touching
Glasses — "Ov, recite me."
He, "My dear, a poet . . ."
"Please."
". . . is always swayed by beauty,"
Touching hands, "but needs the proper
Mood, you understand? A poem . . ."
"I do."
". . . I call, The Dark."
"How thrilling!" He,
"To better grasp the feeling"
Under harboring briar kneeling
"O!"
Puffs lightly out the lamp.*

Michael Woods



Swiss Flowers — Sue Lydiatt

TOLEDO SMITHY

*I am a ring rough-hewn
meshed in with many others,
intertwined,
united yet unique,
and as the Smithy shakes these rings,
one against another,
se passa la vida.*

Peter Knowles

LAST MEETING

*"When you were there, and you, and you"
Your magic wove a web and drew
A silken veil of harmony —
A hallowed glow of harmony,
 as in the skies, where stars are gleaming,
 myriad floating worlds are teeming,
 suspended in that dark profound,
 in silence circling round and round
Around our parting destinies.*

*This veil holds our kaleidoscope
Where passions, memory, desperate hope
Are spun to stasis on the wheel
And tumults turn to peace unreal,
 as when we gaze into the skies
 the stars, whose vast velocities
 appear transfixed, can mesmerize
 our thoughts, till from our burning eyes
They fade into oblivion.*

*Then present, past and future melt;
And seeing you again I felt
Emotions long unreclected
Rise like spirits resurrected:-
 when deep into the night we stare
 and suddenly become aware
 that worlds unseen still swirl among
 those brighter stars,- and still they throng
Like long time dormant phantasies.*

*One moment holds eternity
A gasp of time that brilliantly
Reveals entire the static wheel,
Then bursts the heart's transparent seal,
 as when a meteor's darting light
 has brilliantly illumed the night
 with trailing flames of wild chaos,
 it leaves the human heart at loss
With melancholy memories.*

*And rends the magic veil that held
The hub of immortality.
Then gazing eastwards we beheld
The rising sun remorselessly
Come rolling down upon its prey;
Time chimes again, as old dreams swell,
Revolve, then fading, pass away.
The bugle calls — farewell, farewell.*

Giles Sturdy

'POEM'

*I have moved, of course, out of our place
Two streets west with the sun
And one down in the scheme of things
On to what you will remember as Robert Burns Drive
But which has been renamed since his death
After the mayor.
I have my own entrance by some outdoor stairs,
The sun first lights the wall where hangs
A photograph of you at Venice,
The walls are thick and in three weeks
I have not once seen my neighbours,
Said the landlord in answering the ad
If it's privacy you need
Here you shall have it, Therin lies
The solution to
This being without you.
It comes
From a belief
In the power of the language, is fortified by
Extensive critical reading
And a gift with words, and so
I have been calling the loneliness Privacy
And I have named
The lack of laughter Peace
Within Which One May Work Uninterrupted.
The emptiness
Is titled
Room To Move About
The dear sweet God that's gone
Is called Irrational Folly.*

T A Lozar

EMILY I AIN'T

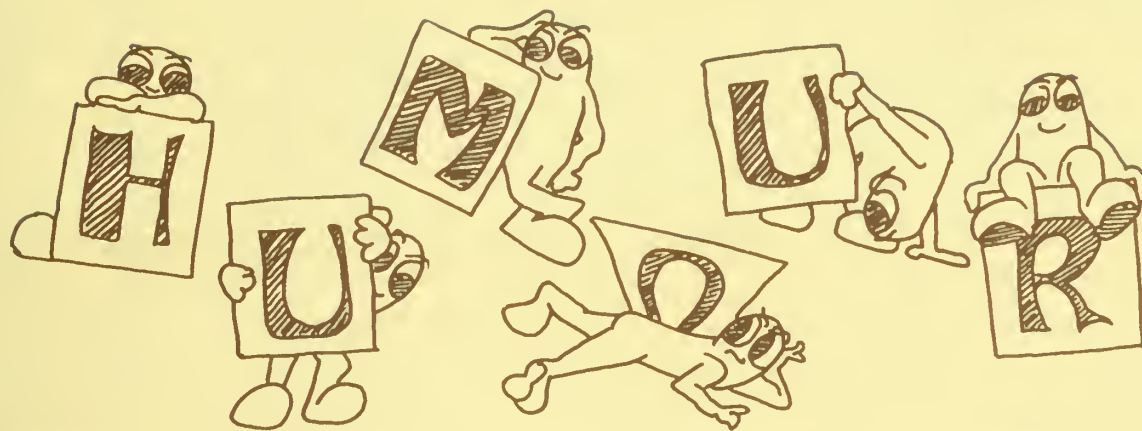
to announce the arrival of guests

*let me have
the snarling of one-eyed mastiffs
caged beside barbed trenches,
and in a formal garden
symmetrically
arranged in cesspools,
tea
with clean danish turds.*

Helena Turunen

S. McConnell





the engineers held their annual initiation at Lindsay this year to clear land
for a highway — highway work is difficult



the outhouse
club had
an active
year. here's
a prominent
member on
a difficult
trip — tripping
is difficult.



an artsman tests out his high altitude aeronautical theories from the top floor of innis college — research work is difficult.



students once again demonstrated their avid concern for world affairs by protesting against the evils of our society. is protesting difficult?





a party of geological and civil engineers who strayed from the gull lake survey camp and became lost — survey work is difficult.



dr. winterbottom,
a cold
stern
man
pictured
against the
iveyed
walls of new
college —
life at new
college
is
difficult.

in home economics close comraderie exists between instructors and students
— but the lab work is difficult.



per ardua ad aspirin, the annual red cross blood donor clinic had a successful year — but getting repeat donors is difficult.



look below to see what u.c. kids did
this year

— going to u.c. is difficult



this is what
people look
like after
their first meal
on campus.

Eating on campus
is difficult.

intense study programs were a success in vic
college library — poetry research is difficult.



annual car rally song


at 45 miles per hour, sing —
"Highways are Happy Ways"

at 55 miles, sing —
"I'm But a Stranger Here, Heaven is my
Home"

at 65 miles, sing —
"Nearer my God to Thee"

at 75 miles, sing —
"When the Roll is Called up Yonder,
I'll be There"

at 85 miles, sing —
"Lord, I'm coming Home"

A black and white photograph of a dense thicket of trees and foliage, with the text "AROUND CAMPUS" overlaid in the lower right.

AROUND CAMPUS

REPORT TO THE STUDENTS

It is still early to make a general assessment of the Students' Administrative Council this year. I will, therefore, restrict my comments to recalling some of the events and activities.

University government and the expansion of the School of Graduate Studies were two questions of interest on the campus. In the fall a national seminar and a conference at the University of Toronto focused attention on the first area. The debate on the "student's role" continued throughout the year. One development was the appointment by Council of representatives to various University Services. The Laskin report brought the needs of S.G.S. to the fore. One aspect of this report created a lively debate. It was the suggestion that graduate students don't get their \$8 worth and should negotiate with Council for a fairer share. Opponents to this view argued that a separation between graduates and undergraduates would hurt the community as a whole.

New and interesting activities were undertaken by many S.A.C. committees. The Chorus participated in an International Choral Festival at Lincoln Centre at the New York World's Fair. The Radio Committee began broadcasting on CJRT-FM Ryerson. Model parliament evolved into a Public Affairs Forum. The High School visits program was extended and a conference was held on campus for high school students. The Blue & White Society filled a week with new activities for Winter Carnival and selected a Carnival Queen who became Miss Canadian Winter Carnival Snow Queen. The Debating Union and Drama Committee held workshops and

an International Drama Festival was held with the presentation of various national plays.

Council expanded its services. The Printing Bureau is producing many of the publications and most of the posters on campus. The Reception Service last fall greeted students arriving on campus, helped them find accommodation and organized activities for the evenings. Now, a group of students are working on an orientation report to assist organizers of future orientation programs

The main 'political' issue of the year has been the financing of higher education. At the annual Congress in September, the Canadian Union of Students determined its policy. "Universal Accessibility" was the catch phrase. The policy was to urge the elimination of all social and financial barriers to higher education to assure that the only requirement for entrance to university is ability. Eliminating tuition fees was viewed as the first priority. National Student Day was organized to draw public attention to this issue. The debate on methods of achieving the objective, however, are only beginning.

Finally, to turn to the 'administrative' aspect of Council's work, we can see some encouraging improvements. A bulletin was sent out weekly throughout the summer to a mailing list of close to two hundred. Machinery was set up for an extended relationship with campus organizations. The new structure of the Council has proved to be a helpful improvement. Finally, there has been considerable progress towards a social and recreational Centre.



Mary Brewin

STUDENTS' ADMINISTRATIVE COUNCIL





University has its hectic . . .



and its quiet moments

COMMENT

by David Jackel
Editor, *The Varsity*

The year 1965-66 began on a note of optimism.

It was supposed to be the year in which the university students of English-Canada would emulate their radical counterparts in Quebec, and begin to make their voices and their viewpoints heard and heeded on everything from university government to Canadian foreign policy.

The student is not merely a passive receptor of knowledge, said the "student activists," he is also a citizen of his country with distinctive and valid opinions to offer.

Delegates from many Canadian universities returned home from the annual congress of the Canadian Union of Students (in Lennoxville, Quebec) convinced that students should start making their presence felt. Plans were drawn up for National Student Day — the first brave attempt by Canada's youth to change the structure of higher education by making it open to all qualified applicants, regardless of their financial resources. "Universal Accessibility" (better known as UNAC) was to be the battle-cry, and National Student Day (October 27) was to be the first nation-wide demonstration of student solidarity.

But, with very few exceptions, National Student Day was a nation-wide fiasco. Student inertia combined with government opposition and the *status quo* recommendations of the Bladen report to discourage any acceptance of UNAC.

Nowhere was the failure of National Student Day more noticeable than at the University of Toronto. When the afternoon of October 27 finally arrived, only a lonely 250 students (out of a

population that rose in 1965 to 22,000) assembled to hear student council leaders describe the virtues of UNAC. This tiny contingent then marched to Queen's Park and heard provincial politicians mumble their usual platitudes. The "demonstration" ended in confusion, with the marchers slinking back into anonymity.

Badly organized from the start, with the student council itself divided on the issue, National Student Day never had any hopes of success. Most students did not fully understand what UNAC meant. The majority thought it was a left-wing plot to institute free tuition; the rest thought it was pointless.

But whatever the reasons for the failure, one thing was certain — student activism at U. of T. was the property of a minority so small and so disorganized that the administration could safely ignore it.

Attempts by university officials to keep their students' noses to the grindstone weren't even necessary. Most students enjoyed being in that position.

The Students Administrative Council's failure to organize National Student Day was a hint of things to come. Although SAC too, had looked forward to 1965-66 with visions of accomplishment, little council tried to do met with success.

It was the years of SAC's first woman president, Mary Brewin of Trinity College. But Miss Brewin's most widely publicized accomplishments during the year were to become engaged and be bitten by a dog.

Efforts by the president and the council to press for a student centre met with a lukewarm and vague response from a university with many building problems and little interest in student projects.

Efforts to begin a program of "course evaluation" were only beginning to show concrete results as the year ended.

Efforts to inaugurate a new kind of Remembrance Day service (both non-military and non-radical) met the fate of most compromises: the SAC service lacked the comfortability of the usual Nov. 11 memorial and possessed none of the dedication visible in the vigil organized by the Student Union for Peace Action.

SAC was troubled by internal problems, too. It was the year council first began to recognize that graduate students were no longer an obscure minority who could be safely ignored. The problem of serving and representing graduate students was further complicated by the graduates' own government, which entered campus politics with admirable energy and colossal naivete, encouraged by an administration that seemed to look without disfavor on an eventual separation of graduates and undergraduates.

SAC's own role was never agreed on by its members. Was council an autonomous government or an assembled delegation of representatives from colleges, faculties and schools? President Brewin argued it was both, but the issue was never resolved; Council spent the year refusing to take stands which might not be approved by the whole campus — to the delight of the "delegates" and the dismay and anger of the federalists.

A symbol of SAC's marching and countermarching could be found in SAC's own office, where reposed a Xerox duplicating machine from October to March — inoperative and space-consuming. Council alternately decided to keep the machine and to return

it, unable to come to a final decision and unable to keep the incident from becoming a campus joke.

Although many SAC projects were spectacular failures, council did have some quiet success with two new operations: the printing bureau and the radio committee.

The printing bureau, scrambling for space in an already overcrowded SAC office, was not as efficient and profitable as some council members had expected, but by the year's end the bureau had at least justified its existence.

The radio committee had numerous problems in the fall; most of the difficulties were financial — committee members and council members could not agree on how elaborate the radio operation should be. After abandoning some of its more grandiose schemes, the committee obtained sufficient money to begin broadcasting, and by November (after some false starts) were producing a daily half-hour program over CJRT-FM. By March the U of T radio show had improved greatly in quality and prospects for the radio communication between the campus and the outside world seemed to have a bright future.

Many of the local councils faced the same problems of apathy and disinterest that stifled SAC. At Victoria College, president Peter Middleton blasted the students in an open letter and urged them to show a little more life. At University College, in contrast, the problem was too much life. Vice-president Stanley Taylor resigned, saying the whole executive was failing to approve decisions taken by individual executive members.

Despite internal problems, the UC Literary and Athletic Society was still the most active initiator of imaginative projects. President Daniel Cooper was the moving spirit behind a series of birth control lectures, while Literary Director Gail Dexter, inspired by the pop and camp furor, produced a Pop-fest which featured such examples of popculture as Judy Lamarsh (live) and the Crimson Ghost (on film).

At about the time the UC Lit began its birth control series, curfews were relaxed at Whitney Hall, the UC women's residence. Students and staff at the college refused to draw any conclusions from the coincidence of these two events.

In the UC men's residence the problem once more was the quality and quantity of the food. Starving scholars protested the high starch content of their small portions, but the problem was postponed, rather than resolved, by an administration committed to self-supporting residences.

The Engineering Society was once more an active and attention-getting student council, but most of the attention was directed at their hasty dismissal of Toike Oike Editor Howard White.

White printed a number of crude but well-known high school football cheers, and the Society, in a rare burst of sensitivity, decided that their image had been smeared. The incident did much to erase the Toike Oike's reputation as an irreverent and independent journal.

The engineers also greeted with regret the announcement that their old Skulehouse, now in the possession of the Physical and Occupational Therapy girls, would be torn down to make way for a new complex of medical buildings.

The most publicized new building of 1965-1966 was Scarborough College. Separated from the main campus in spirit as well as distance the new college was finally occupied by its first students in January. Designed to teach only General Arts and General Science courses, Scarborough employs modern teaching methods, including televised lectures. The architectural quality of the college also drew praise; Scarborough's highly individual design only emphasized more graphically the deadening effect of the spiritless caverns on St. George Street.

While Scarborough opened with fanfares and publicity, Innis College (the second of Toronto's multi-faculty institutions) spent the year looking for a permanent home. Housed temporarily in the tiny building beside the SAC office, Innis officials and students practiced togetherness. College officials also practiced their planning techniques, awaiting the day when the university would give them a location on which to build.

Sports provided the biggest U of T successes in 1965-66. Toronto's football blues won their first championship in seven years, and their championship victory over the Western Mustangs in London was their first road victory since 1962. Blues also did well in hockey and basketball, with prospects for a hockey championship still bright in mid-February.

Toronto placed first in another kind of championship. The Blue and White Society pressed for, and got, approval of their plan to choose a Winter Carnival Queen for the Society's annual mid-winter festivities. The winner, Suzanne Langford of St. Mike's, went on to become the Canadian University Snow Queen, winning the title on the national final held at Waterloo Lutheran University.

Another (and more often viewed) beauty, Libby Jones, ecadysias and B. A., was auctioned off by the students of University College to raise money for the annual Share Campaign of the World University Service. Miss Jones brought in \$107.

Miss Jones' clothes and the student Public Affairs Forum (a refurbished Model Parliament) had something in common. The Forum was on and off thought most of the fall, and didn't hit the boards of the Hart House debates room until late in the first term. Forum elections aroused only slightly more campus enthusiasm than did the Nov. 8 federal election, which went almost unnoticed.

The major news event of 1965-66 was U of T's International Teach-In, which took place in early October and featured numerous speakers (of various political persuasions) debating and arguing the problem of world-wide revolution. The events of the Teach-In itself were overshadowed by disagreements within the ranks of its organizers. Most wanted to keep the program balanced, by merely presenting various points of view and allowing listeners to make up their own minds. Radicals of varying extremes accused the Teach-In of being either pro- or anti-communist, or in some cases, simply wishy-washy.

The end result was to cast doubts on the responsibility of both the teach-in committee and the members of various left-wing groups on campus, and much of the program's positive value was lost in pointless bickering over what a teach-in was supposed to be — a protest or a presentation. Petty jealousies and sordid infighting assumed greater importance than world problems, and the back-room disputes symbolized the

lack of direction and cooperation which affected the whole U of T campus in 1965-66.

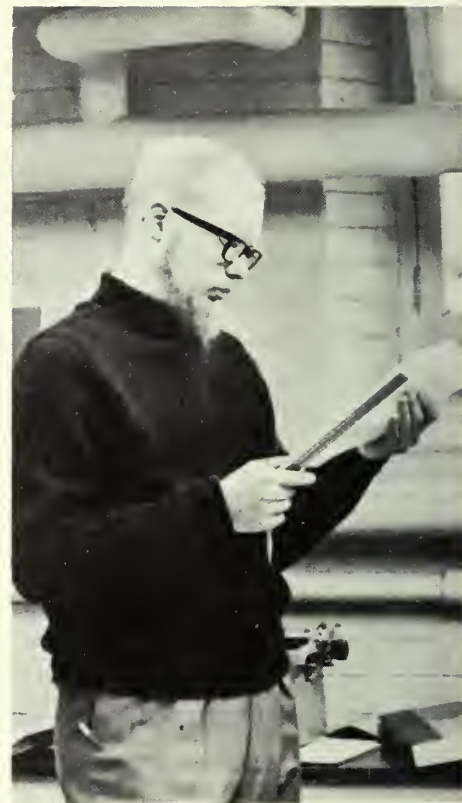
As the year drew to a close a new campus political party, the Student Democratic Union, emerged from the wasteland to contest the annual SAC elections. But within two weeks after its public formation, the SDU was being accused of NDP leanings and its future as a reform party seemed unclear.

The Student Union for Peace Action (the supposedly revitalized CUCND) ended its first year of existence with little noticeable success at U of T. Its protests of the Viet Nam war went largely unnoticed by most students, and SUPA's efforts at university reform somehow never became more than valid complaints without positive alternatives.

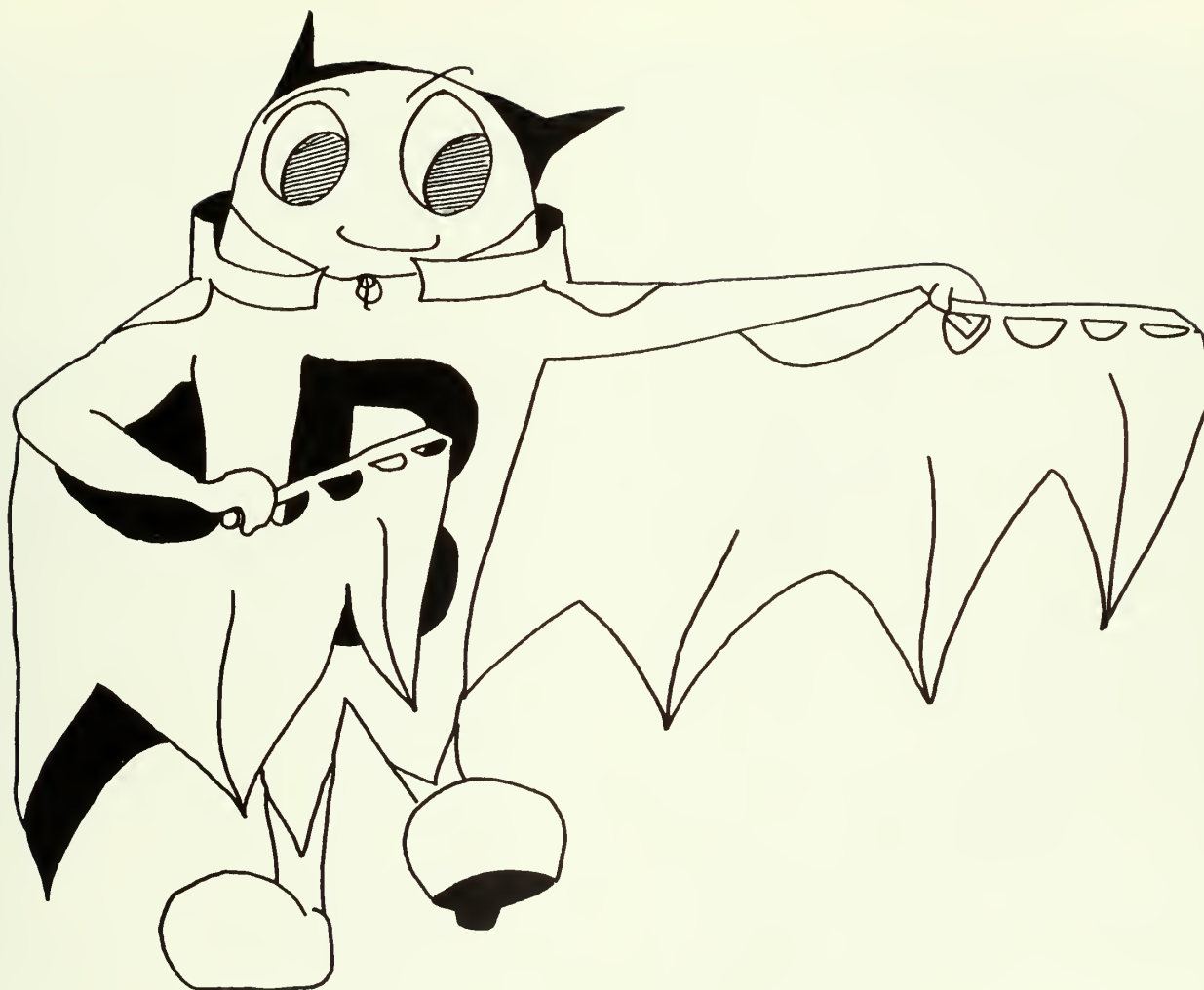
By the end of second term all campus reform elements, whether moderate or radical, were (in the new student jargon) 'hung-up'. They were keenly aware of the problems to be found at a university becoming more vast and

more impersonal, yet this awareness of the need for change was unaccompanied by imagination and resolution. Student radicalism had failed to create a following or even to energize its own supporters. The prospects for the future seemed bleak as the spring approached, and all concerned students thought their way through a period of painful reassessment. October's dreams had become a series of failures that would force both SAC, SUPA and everything between to engage in some hard rethinking of future programs and policies.

The vast majority of Toronto's students went untouched by the plans for marches and protests. If change was to come the average uncaring student would first have to change his views. As March began student leaders had no choice but to ask themselves if the anonymous multitudes at Toronto's largest educational factory could ever be shaken into activity. Slogans, facts and placards had clearly not succeeded. Would anything?



David Jackel



The term went off as planned for the year,
The booster was bennies, the chaser was beer,
The retro was fired, exams took their toll,
And now comes the time to look back at it all!

INITIATION

by Greg Whincup

Because of the great number of colleges and faculties on the campus, our University has a great variety in its initiations. There are no two initiations exactly alike, although there are several types that continually reoccur. Happily, most of these are built on independent traditions to give them some sort of individual flavour; and certainly each college or faculty has an individual character, just like their buildings. Activities last from half a day to as long as two weeks, and from two speeches and a handshake to a week and a half of organized rhubarbs. This reflects different attitudes toward the function of initiations, different degrees of seriousness, different traditions, and sometimes different amounts of 'spirit'.

Although no two initiations are the same, they do fall into various patterns. There is the serious approach of a speech, a reception, and a campus tour, and the slightly more elaborate type that includes a picnic, a little hazing, then a bus-ride to the Hart House Farm, and finally with a lot of hazing, you come up with the kind of initiation stories in song and legend.

In spite of these differences, there are two common factors: speeches and a reception. The freshmen listen attentively to the talk that is familiar to every upper-classman, and in spite of the scorn in which it is held by the latter, it does have an effect on the students. They hear about the real purpose of their education, and the "official" idea of their image to the world. However there was a departure from the tradition this year at St. Michael's College; the subject of their first speech was "Alcoholism and Drug Addiction". That is someone else's image.

Some colleges and faculties spend much less time on initiations than the average. This was the case with the two newest colleges, Scarborough and Erindale, who had only the traditional speeches and the welcome. UC spent an afternoon in a day camp in Toronto, with games and initiation ceremonies while Pharmacy had their picnic on the Island, and added a few more interesting activities, such as a 'kangaroo court', for amusement.

The next step in complexity is the trip further afield. Forestry men spent two days at Hart House Farm, working, Victoria College felled trees at Bolton Camp, and the Engineers deforested a provincial park. However this sort of constructive activity ran into a few difficulties; Trinity had the same idea but their afternoon was rained out, and the buses to take Vichome arrived late, giving the sophomores visions of newspaper headlines. They were able to get over their worry at a party, much, much later in the night.

Beyond this lies the frivolity and exhibitionism of traditional initiations. The nurses made a rather interesting display for two days, dressed quite "originally". Late at night the campus was disturbed from time to time by men of vic creating sundry disturbances. St. Mike's peanut roll down Queen's Park crescent was a highlight for this year's initiation-watchers, and the Trinity cake fight was made even more lively by the addition of a strange violet smoke bomb, barring the path of the freshmen running for the squad. However, the prize for the most impressive initiation stunt goes to Knox College. The patrons of a Yonge Street night club were more than a little surprised to see a young man rise in their midst

continued on page 84



One of the booths at Freshman Welcome



Cake fight at Trinity

to denounce the evils of the demon drink; so was the proprietor, who immediately felt pressed to defend the morality of his position.

It is in the residences, such as Knox, that the most outstanding nonsense can be perpetrated. For that reason, both Trinity and Vic had their freshmen all stay down for two nights in the college; St. Mike's had the same practice, but it was discontinued after last year.

This is not all there is to initiations, especially this year. Besides those previously mentioned, there was the Trini-

ty night for the United Appeal. Wycliffe spent a day at a church, tidying and fixing. This sort of thing has become a welcome part of initiations. This year for the first time there were no newspaper articles about 'silly season', or 'the irresponsible university student'.

In spite of the different approaches to initiations, all agree that the basic purpose of them is to introduce the new students to each other, to their college or faculty as a whole, and to the university itself. More than that it is to instill a feeling of unity into the

group. And even further there is the desire just to 'have a lot of fun'. The trend this year was to less hazing and more fellowship among all years, with more constructive effort in place of stunts. Perhaps the most striking thing about the year was the silence of the Brute Force Committee. There were very few yellow helmets around the campus, and on their outing, the BFC worked harder than the freshmen. They 'requested' freshmen to take the regulations seriously, rather than forcing adherence. Perhaps hazing is definitely on the way out.



LGMB at Freshman Welcome

Would you believe that is an engineer?



Well — would you believe that these are artsmen?

HOMEcoming WEEKEND

This is the weekend when, by tradition, all the alumni return to their "Mother ever dear," to relive old memories and watch their modern-generation counterparts play football, watch folk-singing shows, and the float parades.

This year the "alums", swelling the football crowd to an eleven-year high of 18,570 witnessed a close 1-0 victory for the Blues. It was the lowest scoring game in 67 years of SIFL history.

The Homecoming Show on Friday night was somewhat less well attended. Entertainment was provided by the talented Phoenix Singers and Oscar Brand. The "Phoenixes" are three ex-Belefonte Singers who displayed a driving style with a song in the "gospel" tradition. Oscar Brand is well-known for his humorous songs and patter, and he did not disappoint his fans.

The Homecoming Parade was the best in years; Architecture again took the prize with a pop-art commentary on affluence in the midst of poverty — a model of the new city hall surrounded by slum houses. Other floats depicted picketing, protesting students, the old city hall, and other scenes from "Toronto, No Mean City".

Trinity won second prize and
Meds won third





Toronto won the game 1-0

McGILL WEEKEND

Those who have gone on a McGill Weekend know what happens. For those who have never gone, U. of T. students parade through the streets of Montreal; some even make it to the football game.





It's a Hard Life





Girls Contribute to Share



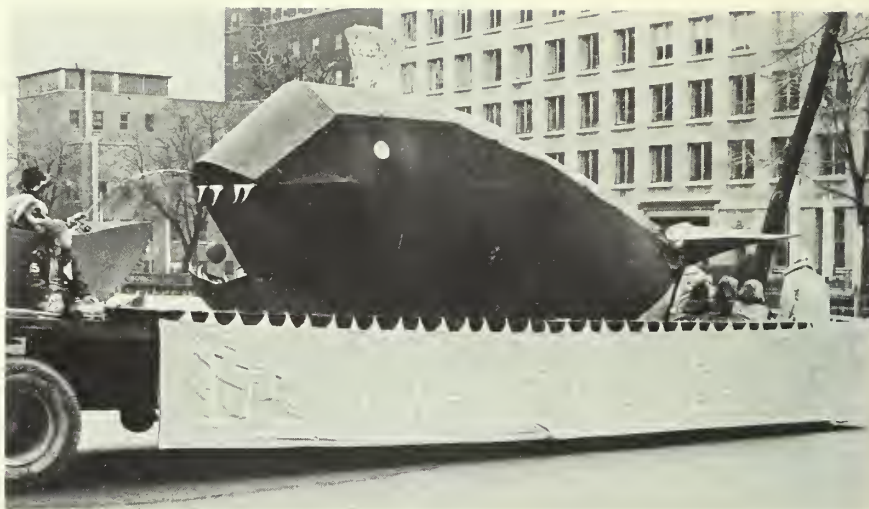
COLLEGE BOWL

November 20th marked the initiation of the Canadian Save the Children College Bowl. The game received the support of many people such as Danny Thomas, Bob Hope, and the Governor-General, but many problems beset the organizers. Everything from high prices and insufficient publicity, to terrible weather contributed to an inauspicious debut of this event.

The Friday night dance at the Royal York and the parade the next day were attended by few more than the Bowl Queen contestants and the bands, even though U. of T. was represented at both events. Sue Firth, the head cheerleader was chosen by a straw vote at the Blue and White Society meeting three days before the event as Varsity's entrant in the Bowl Queen contest. With Financial support from SAC and the UTAA, the B & W Society constructed a float.

The game was a mud-bowl classic, witnessed by fewer than 2,000 rain-chilled hardies. The Varsity Blues won the Vanier Cup with a 14-7 win over the University of Alberta Golden Bears.

Since the profits from this endeavour go to help needy children in Canada and throughout the world, it is hoped that the problems encountered this year will be overcome, and the College Bowl will become an integral part of college football.



Canadian Save the Children Fund Parade



U. of T. played the University of Alberta for the Vanier Cup

THE WORLD OF ART

In keeping with the increasing art-consciousness of our contemporary world, Toronto's University Community has seen a number of vital and important exhibitions presented on campus. University of Toronto's one functioning gallery, The Hart House Gallery, has organized a number of important exhibitions — important not only in the context of art in Toronto, but Art in Canada.

In September, a comprehensive exhibition of portraits by F. H. Varley, one of the founders of the Group of Seven, was shown in the Gallery. Following this exhibition, a series of lively black calligraphic "statements" by Jim Tiley were on view. In January the Hart House Art Committee, in conjunction with the other House committees, presented the Hart House Festival of the Arts, one of two arts festivals held on campus this past year. At this time a major exhibition of the magic-realist, Alex Colville, was shown. This was the second one man exhibition of his work to be shown in Canada. Edmund Alleyn, William Newcombe, and a number of Canadian print makers, were also exhibited in the Gallery's programme.

The U.C. Pop Festival, which followed hard on the heels of the Hart House Festival, presented a series of first-rate Pop and Op paintings by leading American and Canadian painters — as well as an exhibition concerned with Contemporary Woman in contemporary art. Victoria College's Picture Ex-

hibition Committee continued its programme in Alumni Hall with a number of exhibitions and discussions by the artists concerned and a demonstration by the sculptress Ursula Haines. Miss Haines, using as a model a Montreal actress, explained the nature of her portrait work to an enthusiastic audience.

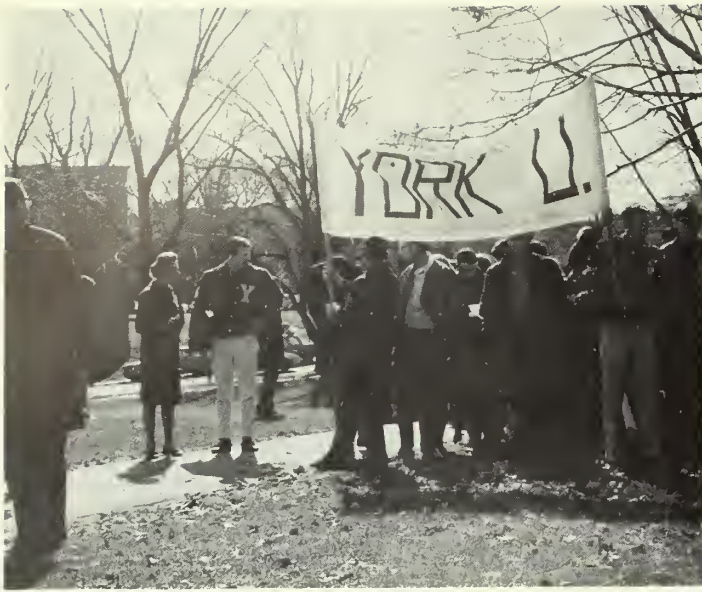
The Buttery of Trinity College was enhanced by an exhibition of the work of Jack Bush, Jim Gordaneer, and Ina Meares in February — as well as an earlier exhibition of student work. The co-operation of gallery owners in exhibiting the work of their artists in a University environment is very commendable. Again at Trinity, St. Hilda's College presented a number of drawings, paintings, and prints, by its members in the College dining hall, while U.C. and St. Michael's College both hung similar exhibitions of student work.

The Varsity Review continued to review and acquaint students with exhibitions held in the City's Art Galleries as well as various campus shows, so that when all is considered, the U of T student, if at all perceptive or interested, can take advantage of the many and various chances to exhibit his own work as well as to become familiar with the work of amateurs and professionals alike working in the contemporary art forms. With the current theme of individual depersonalization in society, the experience of highly personal visual images is a necessary prerequisite to the fulfilment of a liberal education.

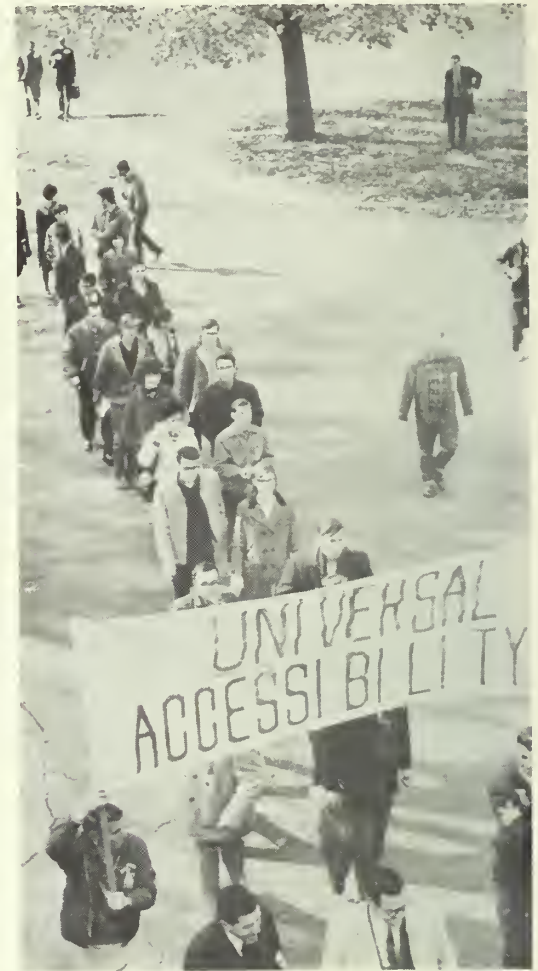


Art Show at Hart House:
magic realism

NATIONAL STUDENTS' DAY



York University and Ryerson joined U. of T.



Students marched to the parliament buildings





Tom Forgrave addressed students
and parliament officials



INTERNATIONAL TEACH-IN

Thanksgiving weekend, 1965 brought a world of violence, social protest, and revolution to the great city of Toronto.

The words of peace and war rang out across the country, from St. John's Nfld. to Victoria B.C. but the greatest experience was to be had in our own Varsity arena.

The organizers of the Teach-In promised that no ideology, policy or philosophy would be placed in an especially advantageous position. How very quickly utopian views faded into reality.

A. A. Berle and Prof. Scalapino were unable to handle the vascillating audience; both viewed the faces in the dark as hostile. Their poor showing aided much to give weight to the left. Prof. Brezezinski of Columbia was the only American who explained, defended, and convinced the audience to his point of view.

Latin America was on the floor Saturday morning and it was the ex-Prime Minister of British Guiana, Mr. Cheddi Chagan, who carried the house. The diminutive Andres Lockwood from the Dominican Republic with more fervour than sense forgot peace and wanted bread.

Vietnam brought emotions to a pitch, and much credit is due to the chairman Patrick Gordon Walker, who prevented a near fiasco. None of the speakers brought forth any hope of a peaceful settlement. Scalapino defended U.S. policy for accepting China's taunts that America was a paper tiger. William Worthy compared American action to a "Hitler-like War", and Nguyen Thu

Duc, the fourth representative of Vietnam remained incoherent and aggressive. Margain, the Cambodian representative, brought a semblance of order as he pleaded for all conflicting nations to go to the conference table.

The final session, Revolution and the Citizen's Moral Responsibility saw the end of any "objective balance".

In turn these men spoke, Lord Fenner Brockway, chairman of the British Council for Peace in Vietnam; Prof. Staughton Lynd, a leader of the U.S. Academic protest against U.S. action in Vietnam; Prof. Richard Mann, one of the organizers of the Teach-In movement; and Prof. George Grant, author of Lament for a Nation.

All of these men are men of peace and unfortunately this meant that they are men of protest. All of these men were positive, offering ways and means of eliciting the truth and following their thoughts with action. It was the only session in which there was a semblance of dialogue, of hope and of appreciation. The audience responded accordingly reserving its warmest applause for these four "outsiders".

The Teach-In's greatest contribution was that it came to be on our campus. It outdrew all other activities with more than 135,000 students in 80 U.S. and Canadian universities listening in. More than 1,000,000 people heard it on radio and television. It drew to its working midst hundreds of people from the university and the community at large and it is to these people that the greatest thanks must be given. The students at the University College and Trinity College provided facilities,



men, and materials in great quantities. Ryerson provided vast electronic and communicative equipment and the S.A.C. supplied its printing and administrative services.

Faculty members, student businessmen, and labour leaders provided the core of seminar leaders. Over 2,500 students filled Sydney Smith and Hart House to continue their discussions into the late hours of Saturday night.

The Teach-In is history now but the echoes of its activities still remain and perhaps sometime soon another International Teach-In will take place. Toronto has shown its desire for such an activity and the community has shown its eagerness to accept this form of leadership from the university community. The Teach-In did not lessen world tensions, nor did it change world policy, but it did allow people to hear, to think and to talk — and this is what the world desperately needs.

by David Hunter,
Executive member
International
Teach-In Committee



PUBLIC AFFAIRS FORUM

This year the Public Affairs Forum replaced the Model Parliament with a new concept in organized political discussion on campus. The Forum held four sessions in the Debates Room at Hart House, one on each of four distinct topics: Financing Higher Education, Canadian — American Relations, Binationalism, and, of course, Birth Control, Divorce, and Abortion. The delegates to the sessions were chosen by the four parties to fill the seats given them in the campus election, held November third; the election elicited the enthusiastic response of about ten percent of the students on campus, who gave the Liberals, led by Hersh Ezrin, 29 seats, Tom Good's New Democrats 25, Bob Radford's Conservatives 19, and Tim Walsh's Communists 2.

The Forum's innovation is that it is not a parliament, but is dedicated to avoiding the petty hassles over rules of order, close adherence to the 'party line', and imitation of Ottawa that characterized the Model Parliament. Our politicians no longer have to deal with Fisheries or Northern Affairs, but can stick to subjects that actually interest the university community in general. And decisions are made by open vote, to allow some individuality in spite of the party structure.

There have been some changes made in the format of the Forum as the delegates try to find out the best way of encouraging serious discussion and

gaining meaningful results. At first they tried to work out a composite resolution, but that effort naturally dissolved in a welter of differing opinions. The second format was retained for the third debate as well, and seems to be reasonably satisfactory: the parties take turns drawing up and presenting a resolution on one of the topics, each party handling one of the debates; the members of the Forum then discuss it and vote a simple majority vote approving or condemning the resolution as a whole. It would be of value if it were possible to make amendments, but the time factor prevents that, for this year at least. More changes in the form of the discussions are likely for next year. The Forum already has one first: the third debate had a woman speaker; the University is once again in the vanguard of social progress.

As might be expected, all four parties agreed, with the rest of us, that university students need more money. The Communist Party proposes immediate abolition of fees and payment of a stipend that gradually rises to a thousand dollars a year to each student, with further monetary rewards for high marks. The New Democrats recommend generally the same thing, but suggest a 'modest' living allowance. The Conservatives were the next step to the right, for they wanted only a gradual abolition of fees, while the Liberals went even further, wanting only a freeze and gradual reduction of fees, coupled with expanded scholar-

ship and bursary programs, and more government grants for facilities and for graduate research, especially in the sciences.

On the topic of relations with the United States, or, more exactly, Canadian foreign policy, the Communists were once again the most radical party. They want a national power grid to control export and distribution of electricity, 'repatriation of the economy', and an independent foreign policy, especially on the International Control Commission in South-East Asia. The NDP wants an independent economy and an independent foreign policy. The Conservatives want our major sphere of interest beyond the Western Hemisphere, but want increased trade with Latin America, while we stay out of the OAS. A major reorientation of the NATO nations is needed, according to the Liberals; there should be a new system of bilateral agreements with the USA to replace NATO, and Europe should do much more in the field of aid to underdeveloped nations.

The parties reveal their true colours best in the debate over Binationalism. The Communists see Canada as a free association of the French and English nations, both having the right to drop out of Confederation at any time. The NDP are somewhat less radical, and simply say that the country is an equal partnership, and both parts of the country should have stronger legislative powers. The Liberals are quite a bit more resigned to the realities of

politics, and simply place limits on federal conditional grants to the provinces, and give the latter a right to opt out of all sorts of shared-cost programs that may be costing them too much money, but leave the decision as to how far this freedom can be taken to the give and take of politics. The Conservatives conservatively think there is still something to be said for the British North America Act, and want a strong national government, warding the provinces off with equalization payments.

Birth control, divorce, and abortion are, by all accounts, the subjects most interesting to students, and forum members all seem to be in general agreement that 'something must be done.' All parties agree that birth control and abortion involves personal moral decisions, and both should be made available to the public at large to make their own decisions. The parties also agree that divorce laws should be made more liberal.

The purpose of the Forum is to stimulate thinking about all these issues among the rest of us. The cliquish structure of the Model Parliament must be avoided, and more students must be involved in the discussions; only then can the quality and seriousness of the debate be kept at a high level, and the pettiness and quibbling of many organized political discussions, especially at Ottawa, be avoided.



EH!





U.C. sponsored a Pop Festival



PRINTING BUREAU

In September 1965, SAC invested in a \$10,000 printing press to set up a Printing Bureau under the management of Bruce Lewis. The first of its kind in Canada to be fully under student control, the Printing Bureau handles all of SAC's printing needs as well as the production of Campus papers such as the Gargoyle and the Strand.

By February, the Bureau had rapidly expanded its facilities in the SAC office and planned to move its office to 91 St. George St. With the increased space, the Printing Bureau hopes to be able to experiment with new techniques and to lower costs even further from the present ten to thirty-five percent reductions. Designed specifically to meet campus needs, the Bureau operates on a cost basis and provides service unmatched elsewhere.

A visit to the Bureau produces an overall impression of bustle about a monstrous machine and shelves of paper amid which we find such people as Bruce, Mike Blugerman (assistant manager), and Paul Williams (pressman) grappling for the many phone calls and parcel deliveries.

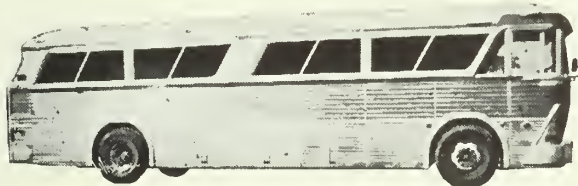
In spite of the Chaotic atmosphere, or perhaps because of it, the Printing Bureau has proved to be one of the greatest assets to the campus this year.



Bruce Lewis



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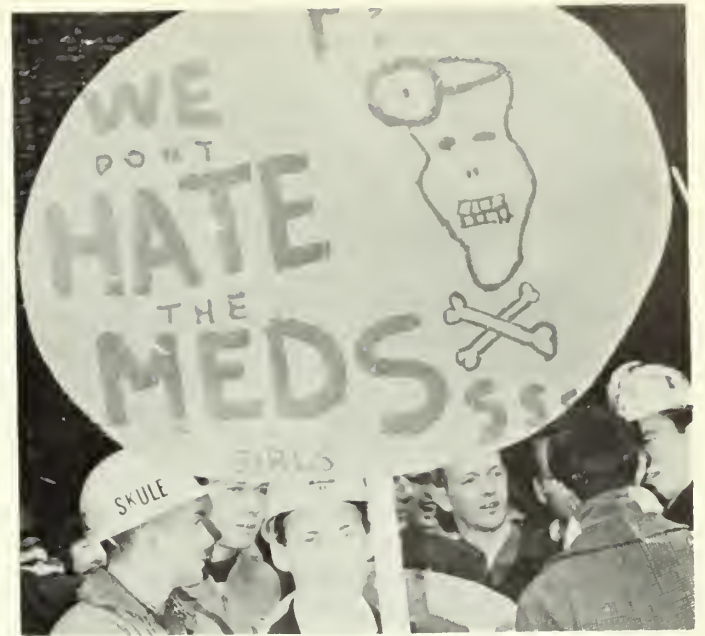
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Rivalries



THE WORLD OF MUSIC

The U. of T. Chorus and Orchestra are both under new leadership this year. The chorus, with Lloyd Bradshaw, has performed with the Toronto Symphony in a program for CFTO, with the Hart House Orchestra as guests of their series, and also with the U. of T. Symphony in their fall concert. Other events include a guest appearance at the Toronto Art Gallery, the Kiwanis Festival, and an appearance at Winter Carnival. Of special interest was a trip to Kingston, Quebec City, and Montreal to perform with the Laval University Chorus and the Montreal University Chorus. At the final concert in March the University of Laval Chorus returned our visit and took part in a bi-cultural program.

The U. of T. Symphony gave a fall concert, and a spring concert in early March. In February they performed at Scarborough College under their leader, Tibor Polgar.

Early in September, the Festival Chorus, under Walther Barnes, took part in the First International Choral Festival held in New York. There they met other university choristers from all over the world, sang in Lincoln Centre and toured the universities along the eastern seacoast. The critic of the Washington Post said that if he were forced to choose among the choruses he would have to choose

the Canadian Chorus as being the best of all those participating.

The Music Committee this year sponsored a Toronto Symphony Concert in collaboration with York University and Ryerson Institute. The T.S. management have expressed the desire to enlarge this successful event into a series of three concerts for next year.

The University of Toronto Concert Band under the direction of Prof. Robert A. Rosevear and Prof. Ward K. Cole presented two on-campus concerts in the MacMillan Theatre of the Edward Johnson Building. A trip to Laurentian University at Sudbury took place at the end of January where two concerts were played, and clinics held by members of the band.

Boyd Neel's Hart House Orchestra had a series of four concerts featuring chamber works from Frescobaldi to John Weinzwieg and Keith Bissell. Guest artists were Margaret Rowan and Nicholas Kilburn. These concerts took the form of a lecture recital with Dr. Neel introducing the music and describing each composition before it was played.

The Hart House Glee Club, under the direction of Walter Barnes, has as their motto "Have Glee Will Travel". Their Repertoire includes many sixteenth century works as well as the traditional Glee Club material. The

organization has been busy this year singing in November at the Remembrance Day Ceremonies, and Fall Convocation. In December they joined with the Blue and White in their annual performance at the Blue and White Christmas Tree.

The Hart House Glee Club also played an important part in the Hart House Festival of the Arts in January, singing in the Great Hall on Saturday night. Plans for next year include an appearance at Montreal's Expo' 67.

The Hart House Music Committee, composed of eleven undergraduates, held a series of Sunday Evening Concerts featuring St. James Cathedral Choir, Paul Brodie, Jan Rubes, the Hart House Glee Club, the Toronto Chamber Orchestra and other artists. In addition the Committee also sponsored noon hour and Wednesday five o'clock recitals and the occasional jazz concert. A CBC celebrity concert is held annually by the committee. This year's concert in December presented Salina Vishnewskaya and cellist Rostrapovitch. This year the Music Committee co-operated with the other house committees in producing a Festival of the Arts in January. Electronic Music, Jazz, Folk Singing, Mixed Media, and Glee Club concerts were presented as the musical portion of the Arts Festival.



Some members of the Festival Chorus





WINTER KEPT US WARM

Joy Teperman and Janet Amos



Winter Kept Us Warm, is the first all student film made by undergraduates of the University of Toronto and the Ryerson Polytechnical Institute. At its world premiere at the Commonwealth Film Festival in Cardiff, Wales, Winter received warm notices.

This is the second film for producer-director, David Sector, who graduated from U. of T. last June. Sector's first film, Love with a Proper Guppy, gained wide recognition after it was shown on CBC television.

The plot is set within the campus and explores the friendship of two boys of different backgrounds who meet in University. Included in this film are their relationships with two different girls. The lead actors have mature performances and deserve much praise. Joy Teperman, the flashy Bev, portrayed a wide range of emotions naturally and believably. John Labow as Doug, a sang froid swinger, exhibits a forcefully brooding presence on screen. Henry Tarvainen, the shy Peter, plays his role with considerable sensitivity. Janet Amos as the tender, knowing Sandra effectively portrays her role. All the actors are veterans of Hart House theatre.

The film is a wise, warm look at campus life. It is hoped that this first effort will be followed by many others of equal merit.

U. of T. RADIO

On September 22, 1965 the University of Toronto radio was born. With the help of its technical staff, for the first two weeks, it was a two man show, Doctor Claude Bissell and George Flak, director of the radio committee.

The purpose of U. of T. Radio is to represent the University to the public and to promote events that would be of general interest. It deals with current happenings on campus but is not a here and now type of broadcasting. The station hopes to introduce the professors' viewpoints as well as that of the students. In its programme schedule, U. of T. Radio interviewed researchers from the University and students who were making noteworthy contributions to campus life.

U. of T. shares a hookup with the Ryerson station, CJRT. A joint programme, The College Circuit, is broadcast Monday through Friday, after five. There is no advertising on the station and expenses are covered by a SAC grant. The College Circuit includes news casting, excerpts from campus theatrical productions, literary reviews, sports (with the woman's touch) and special events.

An estimated audience of fifteen thousand tune in to the programme. The Radio Committee is optimistic about joining another radio station. About one hundred people are working in connection with the radio broadcasting. These involve technical staff, news staff and those covering on-the-spot reporting.

With new equipment and a new location U. of T. can expect many excellent programmes from its Radio Committee.



Alan Gold (Above, Standing),
Second Term Radio Director



George Flak



WINTER CARNIVAL

by Jim Kenzie

The success of the Winter Carnival '66 began when the S.A.C. rescinded their statute banning beauty contests on the U. of T. campus. The publicity department of the Blue and White Society promptly organized a contest to select a winter carnival queen. The winner was Miss Suzanne Langford, a charming seventeen-year old first year student from St. Michael's College. Miss Langford succeeded in a later contest to become the all-Canada Carnival Queen. Suzanne presided over Winter Carnival week from the opening of the Ice Palace to the end of the Folk Concert.

This year the Winter Carnival began on Friday February the 4th, and lasted to Sunday February the 13th. After the hockey game on the first Friday a torchlight parade ensued from the arena to the Soldier's Tower at Hart House. Here the intrepid Blue and White Society featured a Street Dance to the sounds of the Canadian Deltones, a swinging animal band.

Another innovation began early Saturday morning as Varsity's Winter Rally provided a test of driving skill and navigational ability for six hours. These competitors covered over two hundred miles from the first check point at Simcoe Hall to the finish at Sigmund Samuel Library.

The ice sculptures provided many interesting creations to the theme of "Snow What". That evening a skating party was held at the Jolly Miller in Hog's Hollow.

Sunday the S.C.M. sponsored a unique jazz liturgy in the form of an inter-denominational service in the Great Hall at Hart House. Contemporary music, playlets updating medieval moralities and modern interpretive dancing were featured.

Ice Frolics '66 was held on a Monday night this year to enable the Blue and White Society to present a star-studded cast of top skating talent from across Canada. This show required many hours to co-ordinate skaters, music and sound. The show ran without a hitch and all witnessing it were amazed by the exhibition by such performers as Petra Burka, Virginia Thompson, Doctor Charles Snelling, Chris Snyder, Peggy and Jane McCutcheon, Carole Forest and Kevin Lethbridge, Debbie Wilkes, Susan and Paul Huenergard and Jay Humphrey.

Tuesday night featured music with the U. of T. Chorus, a madrigal group, a stage band and two guitars. Study night followed on Wednesday giving the Blue and White Society a chance to catch their breath. Thursday was film night featuring Roadrunner cartoons plus two full-length movies.

The Varsity football team received many post-season bruises while tangling with the Varsity cheerleaders in a broomball game after Friday's hockey game.

Two of the traditional events were held over for Saturday morning; that is, a Chariot Race and the Toilet Bowl. However the Blue and White also introduced two new events, the Powder Bowl and the Bronco Tug o' War. The crowd thawed out to the music of the Suedes in the Great Hall on completion of the outdoor activities.

Finally at the end of this action-packed ten days the traditional folk concert was held at Varsity Arena. Rich Little, Gord Lightfoot and the Allen Ward Trio comprised the entertainers for this annual show. And so Winter Carnival was brought to an end for another year.





The Ice Palace



Ice Sculpture Contest:
First prize went to Mayor Givens
and his snow-melting machine



Second prize was won for Eddie
Shack.

Campus Co-op's entry attracted attention...
of the morality squad.

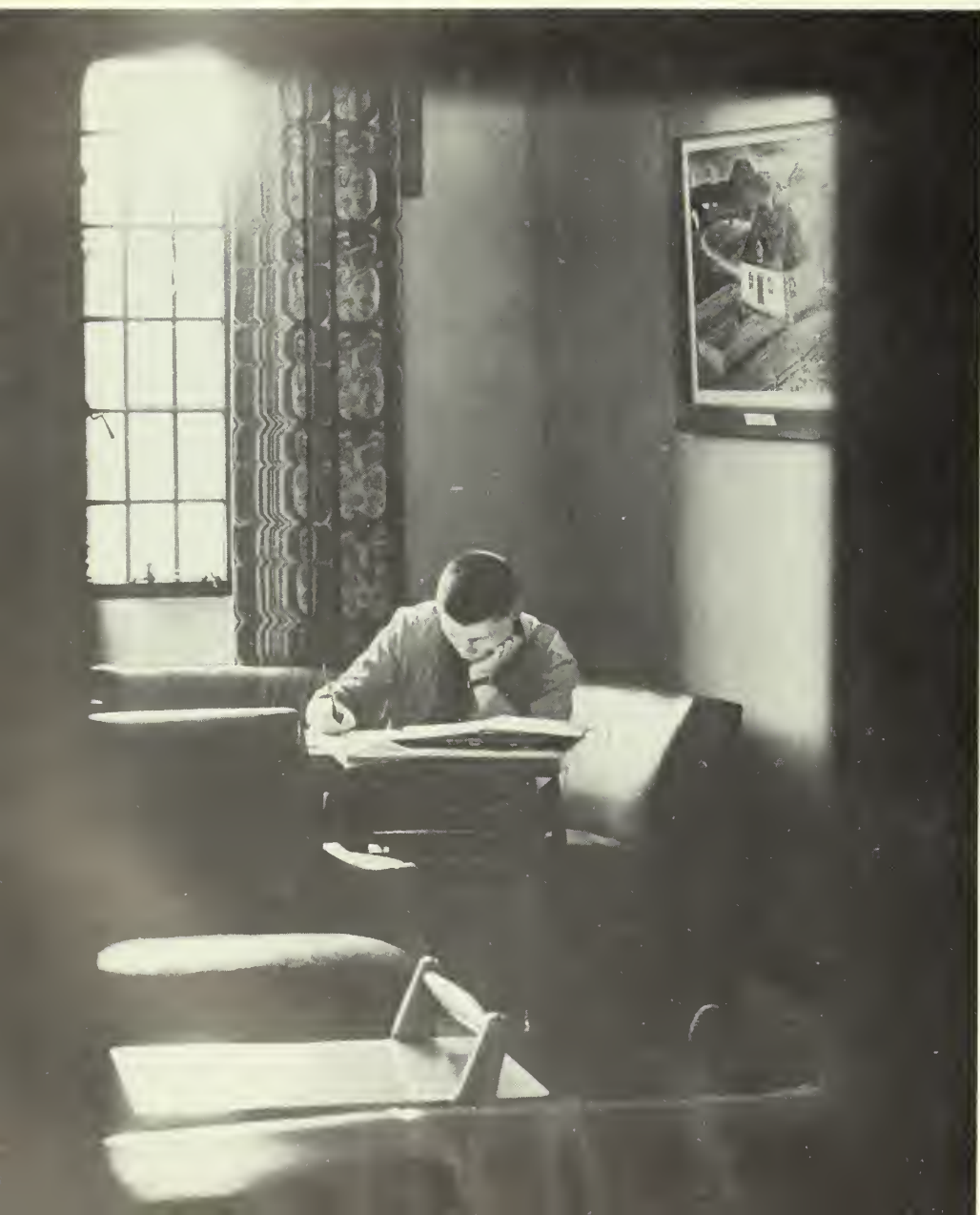




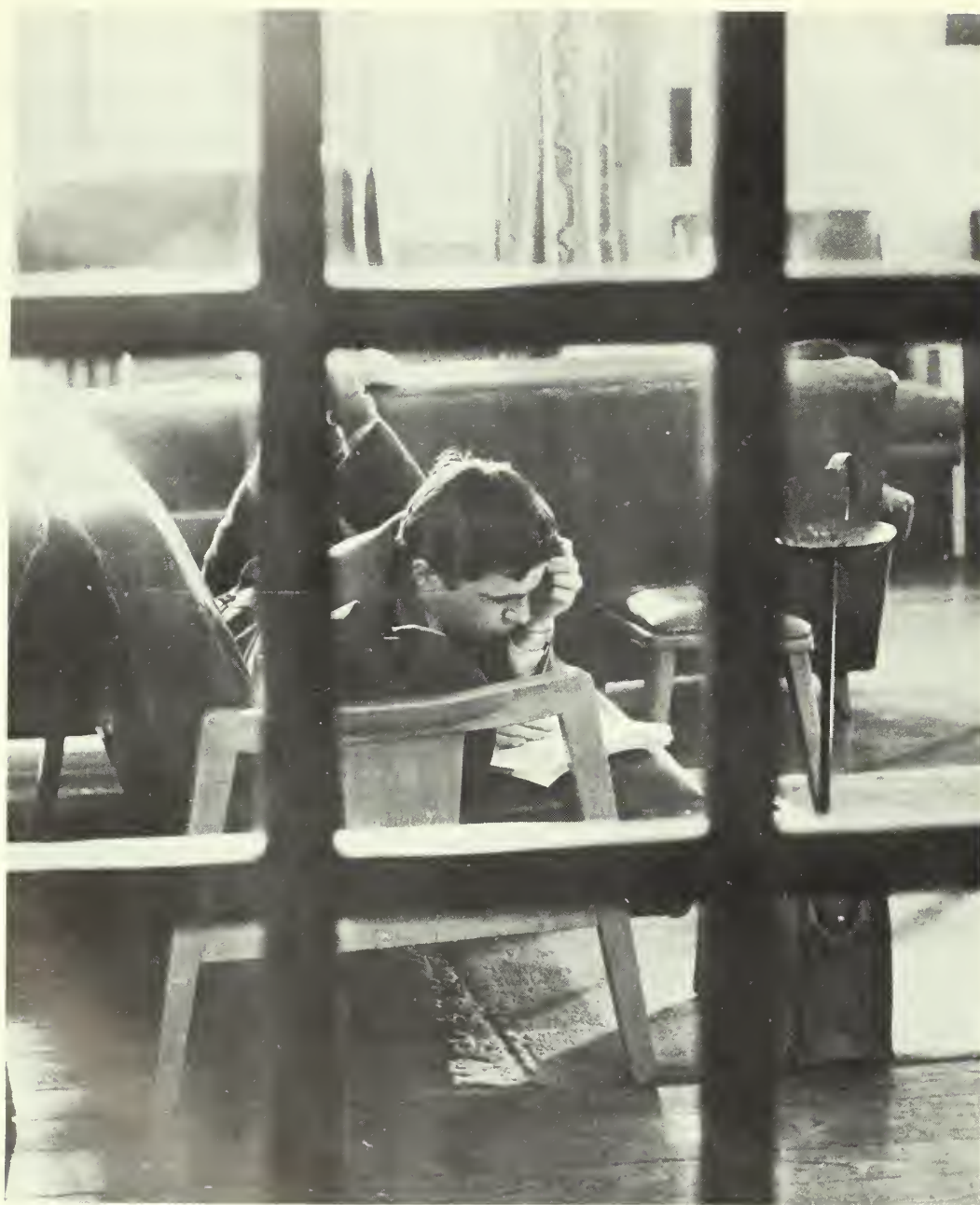
Many new events were added to this year's Winter Carnival, such as the torchlight parade to Soldiers Tower where a street dance was held.



The following photographs were taken by Mr. Wm. Brooks who won the Karsh Trophy Competition in the Camera Club. Exhibition at Hart House, 1965.







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WOMENS ATHLETICS

INTERCOLLEGIATE 65-66

The story of this year's results in the Women's Intercollegiate circuit is yet to be finished. In the Tennis Tournament at McGill Miss Brenda Nunns won first singles while McGill was victorious in second singles and doubles. The Intercollegiate Championship was not declared, as some of the matches were cancelled due to inclement weather. Archery swept the Intercollegiate tournament with an overwhelming score of 3975, 368 over second place Western. A tie was declared between Toronto and Western in Field Hockey with each team winning 3 games, and tying 1.

Toronto swam to a 3rd place finish behind McGill and Western in the Intercollegiate Swim Meet at Queens in November with a 1st place contribution in Diving and a second in Synchronized. The Intercollegiate Volleyball Team is well into the season with an unbeaten record. To date they

have been victorious over Western twice, McMaster McGill and Queens.

Intercollegiate Basketball have posted two victories and two losses on the chart, their season being just half over, and one loss and one win have been recorded in the Curling with the final Intercollegiate Bonspiel coming up at McMaster at the end of January.

The Ice Hockey teams appear to be heading for their fifth Inter-collegiate victory in succession with an unbeaten record to date.

The Fencing Championships being held at McGill could go to anyone this year as could the Intercollegiate Badminton Championships, as all six universities seem to indicate equal strength.

Another victory is anticipated for the Indoor Archery Team as this team will possess some of the Outdoor Archery Championship Team members.

Toronto ends Western's five year
victory streak with a score of 38-33.



Exhibition Bonspiel at Ryerson in preparation for the Intercollegiate Championships.



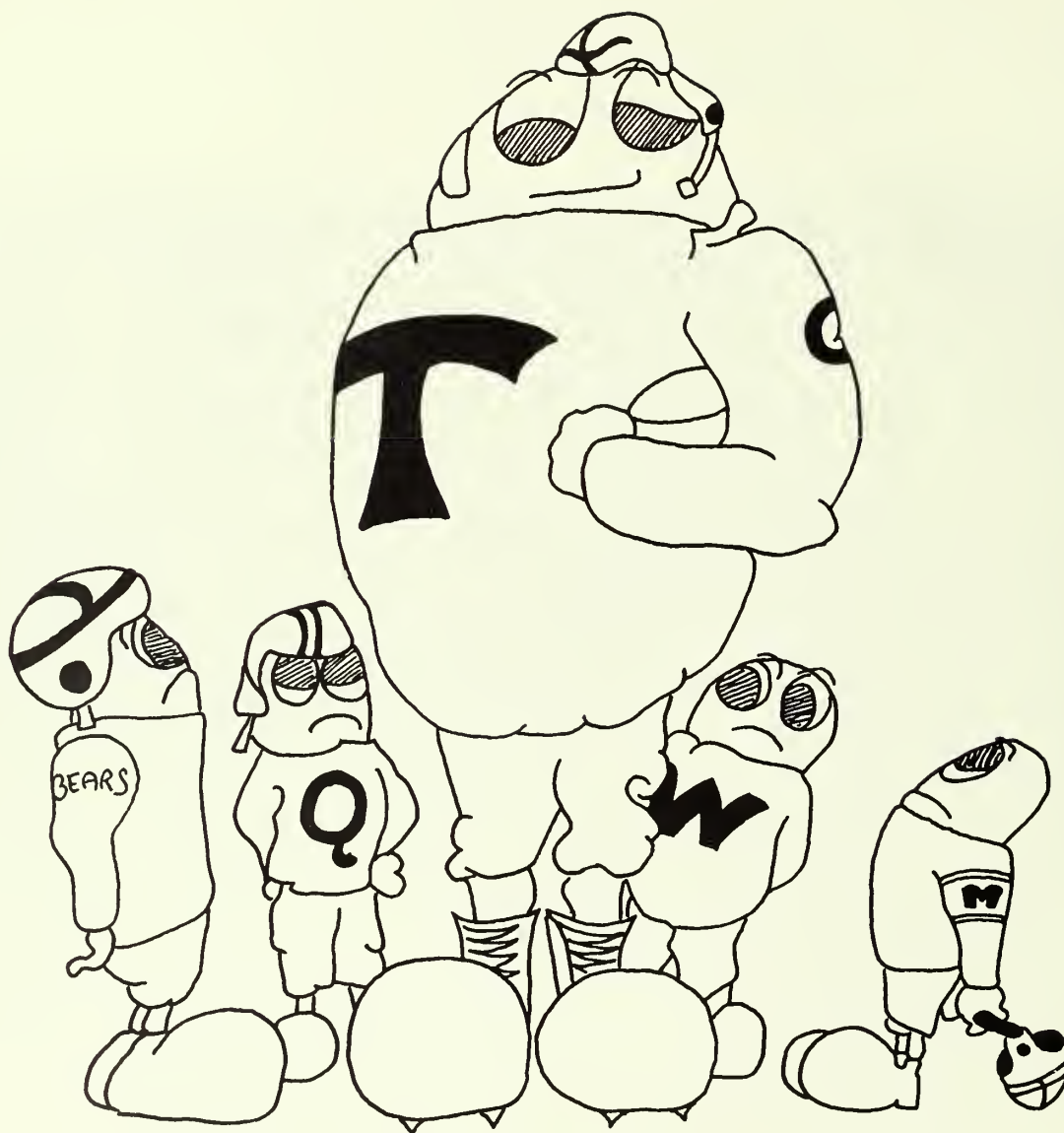
Western goes down in defeat in another
Intercollegiate Volleyball Game.



Another goal by the strong Women's
intercollegiate Hockey Team.



SPORTS





SPORTS YEAR IN REVIEW

by Howie Fluxgold

It was a year of firsts for Varsity football Blues. For the first time since 1959 they defeated Queen's Golden Gaels. They won the Yates Cup for the first time in seven years and the Vanier Cup for the first time ever.

It was also a year when Blues provided entertaining but highly unpredictable football. Blues, who were rated the most explosive team in the Senior Intercollegiate Football League, needed one of Ward Passi's slapshots from the blueline to pull out a 1-0 victory over Queen's before 18,570 spectators on Homecoming Weekend.

In a seemingly innocent play, Passi booted a 39-yard punt into the end zone in the last minute of the first half to score the only point of the game.

Both teams missed several scoring chances in the second half and as a result, Blues won by the lowest score recorded in the 67-year history of the league.

Quipped Passi, a forward with hockey Blues during the winter months, "I won it with a slapshot from the blueline."

Blues won only one of their next three games, 48-15 over Western Mustangs, but it was enough to force a playoff with the league-leading Mustangs. In the most thrilling game of the year, Blues put on a spine-tingling comeback to defeat 'Stangs in London and bring the Cup back to Toronto. It was the first time Blues had registered a regular season victory in London since 1961.

Blues spotted Western a 14-0 lead in the first quarter on long touchdown runs by Rob Campbell and Larry Burridge. But the combination of a solid Varsity defence and Bryce Taylor Mike Eben and Gerry Sternberg launched Blues on the comeback trail.

Eben, playing his best game of a spectacular season, put Blues on the scoreboard late in the second quarter on a 40-yard pass and run play in which he tight-roped down the sideline eluding several tacklers.

He scored again early in the fourth quarter on a seven-yard pass from Taylor to set the stage for Gerry Sternberg's game winning major a few minutes later.

Sternberg, who was contained for most of the game, took a short pass from Taylor and raced 45 yards down the sidelines to score what proved to be the Yates Cup winning touchdown.

The defence came up with a number of key plays in the dying minutes of the game to preserve the 21-16 victory and put Blues into the Canadian Save the Children College Bowl.

The Bowl game for the Vanier cup, was played before 2,200, the smallest crowd of the season due, in part, to a lack of organization by the sponsors and a steady downpour of rain which fell throughout the afternoon.

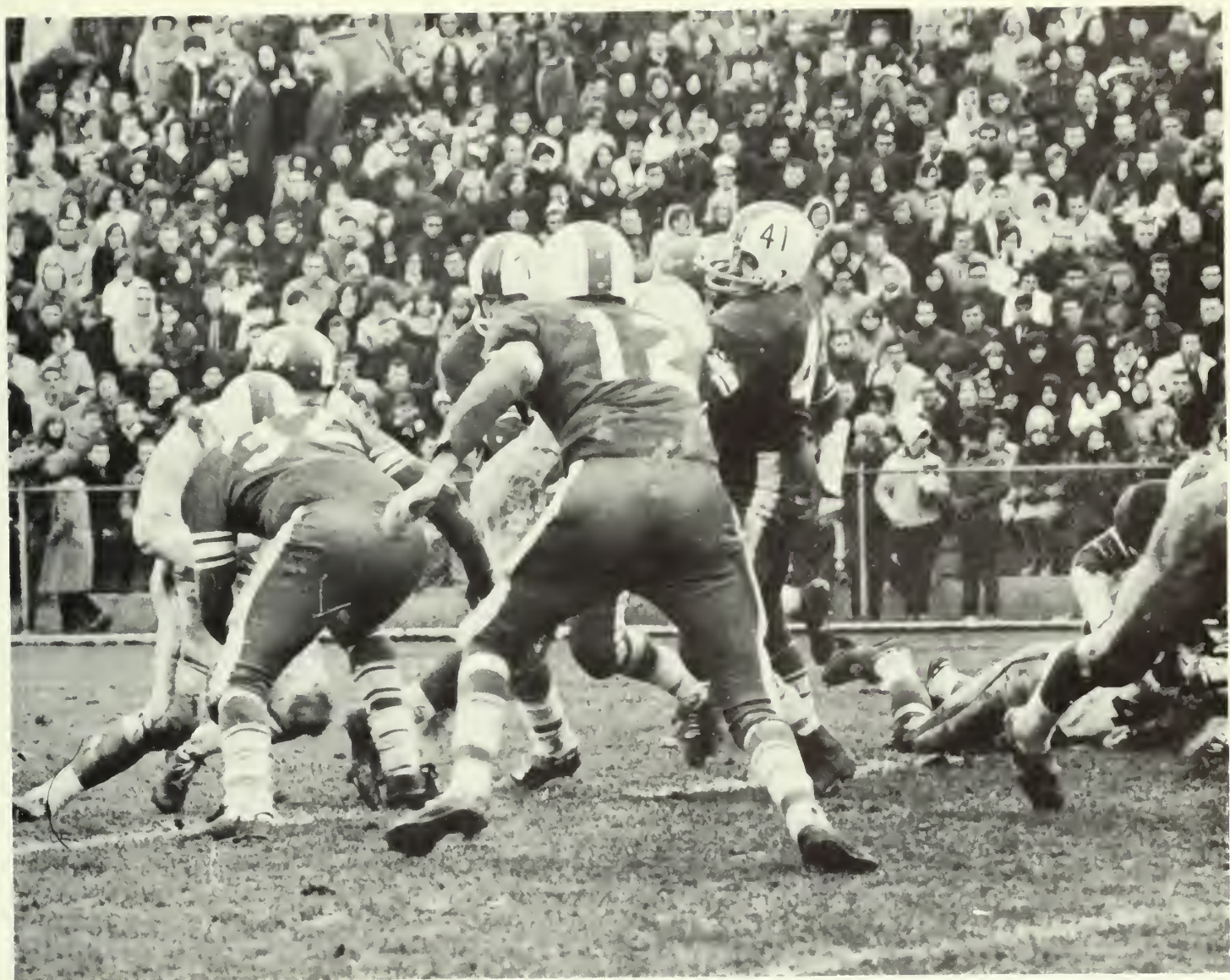
University of Alberta Golden Bears, with numerous victories over SIFL teams, came east confident they could knock off the Senior Intercollegiate champs. However, Blues made it clear they weren't about to be beaten by any team with only half an attack.

Without an adequate passer, Bears were forced to grind it out on the muddy field. Against a defensive line which had rounded into the toughest in SIFL they got nowhere. In fact, their only touchdown came on an interception of a Bryce Taylor pass.

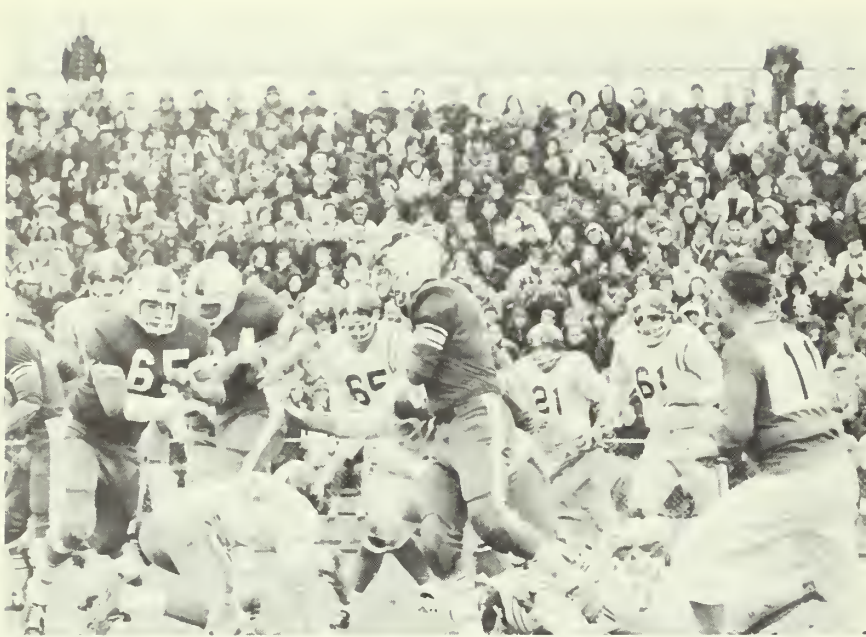
Taylor however, made up for his mistake in the third quarter when he caught Bears completely off guard

calling the "hot potato" play. The ball went from Taylor to Sternberg to flanker Jim Ware who handed it back to Taylor. Taylor then threw a strike to Mike Eben, all alone in the end zone.

Taylor scored on the last play of the game to make the final score 14-7 and give Blues the Vanier Cup. Gerry Sternberg, Blues' leading ground gainer under adverse conditions, was awarded the Teddy Morris trophy as the game's outstanding performer.



Yate's Cup Playoff



Yate's Cup Playoff







Vanier Cup Playoff:
Who had the worst of it — the players
or the spectators?

One Hundred and Thirty-Five



While Varsity football Blues were taking all honours during the fall, several other teams were winning inter-collegiate crowns. Soccer, track and field, harrier, tennis, volleyball and water polo titles were won by University of Toronto.

Soccer Blues enjoyed one of their most successful seasons ever, winning all nine of their games including a 6-1 decision over Queen's Golden Gaels, the eastern division champs to take the Blackwood Cup. Blues were led by Frank Soppelsa, the team's top scorer with 16 goals.

Although Bruce Kidd and Bill Crothers have graduated, Toronto's track and field teams keep on winning. The Tait Mackenzie Trophy came back to the Hart House trophy case for the fifth successive year when U. of T. took the intercollegiate crown at Waterloo. Varsity's distance men made the difference as John Loaring won the 880, Dave Bailey the mile, and Pete Buniak the three mile.

Blues strength in the distances was even more evident when they won the Canadian intercollegiate Larrier crown with a perfect score after taking the Ontario-Quebec Athletic Association title earlier.

In the National championship, the first five finishers were from Toronto.

In order of finish they were: Pete Buniak, Rich Pyne, Dave Bailey, Doug Macdougall and Brian Richards. In harrier, points are assessed according to the position in which the runner

finishes the race. The team with the fewest points is declared the winner.

Before donning his skates to play for the hockey Blues, Pete Burwash guided the tennis team to its inter-collegiate championship winning the singles crown and combining with Paul Kent to take the doubles title. Blues won the team championship by a score of 5-1 over eastern division champs McGill.

For the first time ever, an intercollegiate volleyball tournament was held and Varsity took the OQAA championship. The win was an impressive one for the squad coached by Taimo Pallandi, as they lost only one of 16 games.

In one of the most exciting series of the year, Toronto's water poloists retained the Herschorn Cup by a total score of 18-16 in a two-game total point playoff with McGill. Hartley Garfield was outstanding in goal for Blues especially in the second game when the teams tied at 11-11.

Not every team can win a championship and Varsity's football team without padding, the rugger Blues, were one of these. For the second successive year, Queen's took the Gilbert Turner Cup losing only one game to Blues' two defeats at the hands of Queen's and McGill.

Varsity's rowers were unfortunate enough to lose their title as intercollegiate champs to a fired up McMaster crew at St. Catherines. The same misfortune befell the golf team which lost to Mac at Quebec City.

While Varsity Blues have not dominated play in the Senior Intercollegiate Hockey League this season, they have treated their followers to some of the most exciting hockey seen at Varsity Arena in a number of years.

At publication time, Blues were preparing for their game with league-leading Western Mustangs. The 16 game schedule has come down to this one game with the winner virtually assured of the SIHL title and a trip to the Canadian National finals at Sudbury.

Blues have lost twice so far this season to Western and Laval and were tied 6-6 by the surprisingly strong Waterloo Warriors.

The highlight of the season however, has been the team's success in the United States during the Christmas holidays. Blues played four games within a week and won them all. They were voted the best team at the Christmas College Hockey Festival on the basis of victories over Northeastern and Harvard.

Ward Passi was named the Festival's outstanding performer while on defence, a position he had never played before. In addition to Passi, goaltender Bill Stewart and centre Paul Laurent made the Festival all-star squad.

Blues moved on from Boston to Detroit where they captured the first

Great Lakes Invitational Hockey Tournament in the Detroit Olympiad by defeating Colorado College and defending U.S. college champs, Michigan Tech.

Passi again made the tournament all-star team at defence as did Bob Awrey and Henry Monteith who was chosen the tournament's outstanding player. Monteith scored four goals in Blues' 6-2 victory over Michigan Tech.

Blues didn't get a trip to the World Student Games in Turin, Italy and Steve Monteith didn't win the scoring crown mainly because he missed the first four games of the season with mononucleosis. Nevertheless, the SIHL enjoyed one of the most successful seasons in its history.





With the loss of numerous all-stars and the division of the Senior Intercollegiate Basketball League into two divisions the calibre of competition has decreased this year.

Windsor is once again the class of the league, both eastern and western A divisions.

Blues have lost twice to Lancers, although they almost pulled off an upset in the confining confines of Hart House. They were within one point of Lancers after the first half but Lancers had too much power for Blues in the second.

Despite the loss of their two all-star guards, Dave West and Vlad Baranowicz, Blues have done quite well this season. Doug Lockhart has come into his own as an intercollegiate ball player and Captain Bill Woloshyn has proved to be a steadying influence on the team.

Blues had difficulty winning their exhibition games but when league play began they were ready and won their first two games against McMaster and Western on the road.

After trouncing the inept Guelph Redmen twice in the same week, Blues went down to their first loss of the season at the hands of Waterloo Warriors at Hart House. Blues led 49-37 at the half but Warriors never gave up and two foul shots by Dick Aldridge in the final minute of the game gave them a 80-79 victory.



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